

BOARD MEETING DATE: July 11, 2014

AGENDA NO. 20

REPORT: Report to Legislature and CARB on SCAQMD's Regulatory Activities for Calendar Year 2013

SYNOPSIS: The SCAQMD is required by law to submit a report to the Legislature on its regulatory activities for the preceding calendar year. The report is to include a summary of each rule and rule amendment adopted by SCAQMD, number of permits issued, denied, or cancelled, emission offset transactions, budget and forecast, and an update on the Clean Fuels program. Also included is the Annual RECLAIM Audit Report, as required by RECLAIM Rule 2015: Backstop Provisions.

COMMITTEE: No Committee Review

RECOMMENDED ACTIONS:

Receive and file the attached report, and direct staff to forward the final report to the Legislature and the California Air Resources Board.

Barry R. Wallerstein, D.Env.
Executive Officer

LBS:DA:WS:EH:jf

Background

SCAQMD is subject to several internal and external reviews of its air quality programs. These include an annual review of SCAQMD's proposed operating budget for the upcoming fiscal year and compliance program audits.

In 1990, the Legislature directed SCAQMD to provide an annual review of its regulatory activities (SB 1928, Presley), and specified the type of information required

(Health and Safety Code §40452). Many of the required elements overlap with other requirements of separate legislation. For example, information on SCAQMD's Clean Fuels Program is a requirement of this report, but is now also a separate requirement under legislation passed in 1999 (SB 98, Alarcón). The purpose of this report is to fill in pieces of additional data needed to compile a comprehensive regulatory overview. Most of the information included in this report is not new, but simply a compilation of information previously seen by the Board. For example, Chapter I lists all the rules and rule amendments adopted by the Board during 2013. The Annual RECLAIM Audit Report is required to be submitted to the Legislature by RECLAIM Rule 2015: Backstop Provisions.

The specific requirements of this report include:

- A summary of each major rule and rule amendment adopted by the Board;
- The number of permits to operate or construct that were issued, denied, cancelled or not renewed;
- Data on emission offset transactions and applications during the previous year;
- The budget and forecast of staff increases or decreases for the following fiscal year;
- An identification of the source of all revenues used to finance the SCAQMD's activities;
- An update on the results of the SCAQMD's Clean Fuels program; and
- The annual RECLAIM Audit Report.

Attachments

Report to the Legislature on the Regulatory Activities of the SCAQMD (for Calendar Year 2013)

**REPORT TO THE LEGISLATURE ON THE
REGULATORY ACTIVITIES OF THE
SOUTH COAST
AIR QUALITY MANAGEMENT DISTRICT**

**Pursuant to
Chapter 1702, Statutes of 1990 (SB 1928)**



JULY 2014

Cleaning the Air that We Breathe...

**REPORT TO THE LEGISLATURE ON THE
REGULATORY ACTIVITIES OF THE
SOUTH COAST
AIR QUALITY MANAGEMENT DISTRICT**

**PURSUANT TO
CHAPTER 1702, STATUTES OF 1990 (SB 1928)**

JULY 2014

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Barry R. Wallerstein, D.Env.
Executive Officer

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EXECUTIVE SUMMARY

The South Coast Air Quality Management District (SCAQMD) is subject to internal and external reviews of its air quality programs. These include annual reviews of the District's budget, forecast and proposed operating budget for the upcoming fiscal year, and compliance program audits. In addition, the SCAQMD is required to submit to the California Air Resources Board (CARB) and State Legislature an annual review of its regulatory activities for the preceding calendar year. The attached report satisfies this latter requirement which is mandated pursuant to Chapter 1702, Statutes of 1990 (SB 1928, Presley), Section 40452 of the California Health and Safety Code.

Required elements of this report include:

- Summary of each major rule and rule amendment adopted by the District Board in the preceding calendar year, with detailed information about their costs, emission reduction benefits and other alternatives considered;
- Number of permits to operate or construct issued, denied or not renewed, segregated by industry type;
- Emission offset transactions and applications during the previous fiscal year;
- Forecast of budget and staff increases proposed for the following fiscal year;
- Identification of all sources of revenue used or proposed to finance SCAQMD activities; and
- Results of the SCAQMD's Clean Fuels Program.

Chapter I summarizes last year's rulemaking and permitting activity, including offset transactions. Chapter II references the District's draft budget and three-year forecast and existing revenue sources.

Information on the SCAQMD's Clean Fuels Program is also a requirement of this report. Legislation enacted in 1999 now also requires an independent report to the Legislature on the Clean Fuels Program by March 31 of each year [Health and Safety Code 40448.5.1]. The Clean Fuels Program Annual Report and Plan Update is included in this document as Chapter III. Chapter IV is the Annual Regional Clean Air Incentives Market (RECLAIM) Audit Report for the 2012 Compliance Year (inclusion in this report to the Legislature is required by SCAQMD Rule 2015). The report assesses emission reductions, average annual price and availability of RECLAIM Trading Credits, job impacts, compliance issues, and other measures of performance for the fifth year of this program.

In addition to the requirements of this report, various outreach activities are carried out by the SCAQMD Legislative & Public Affairs Office. Information on these activities is included in a monthly report to the SCAQMD's Governing Board and is available by contacting the SCAQMD at 909-396-3242 or visiting the website at www.aqmd.gov.

CHAPTER I
RULE DEVELOPMENT AND PERMIT ACTIVITIES

RULE ADOPTIONS AND AMENDMENTS FOR 2013

Rule 102 – Definition of Terms

Rule 102 was amended to add 1,1,1,2,3,3,3,-heptafluoropropane (commonly known as HFC-227ea) and trans-1,3,3,3-tetrafluoropropene (also known as HFO-1234ze) to the list of exempt compounds in the rule. *Estimated Emission Reductions:* None. *Alternatives:* None. *Cost Effectiveness:* None. *Socioeconomic Impact:* Refer to Socioeconomic Impact Analysis section. *Source of Funding:* Emission Fees.

[Amended March 1, 2013]

Rule 1148.2 – Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers

The purpose of Rule 1148.2 is to gather air quality-related information on oil and gas well drilling, well completion, and well rework activities in order to identify the magnitude, type, and frequency of emissions associated with these operations. Based on information gathered under Rule 1148.2, the SCAQMD staff will report to the Governing Board on findings and recommendations regarding further data collection, emissions controls, and regulatory needs, if any. Rule 1148.2 impacts owners and operators of onshore oil and gas wells within SCAQMD's jurisdiction by establishing requirements to notify the Executive Officer when conducting well drilling, well completion, and well reworking activities that involve production stimulation activities such as hydraulic fracturing, gravel packing and/or acidizing. The adopted rule additionally establishes emissions and chemical reporting requirements and also impacts suppliers of chemicals and additives used in drilling, rework, and well completion fluids. *Estimated Emission Reductions:* None. This rule adoption only establishes notification and reporting requirements and therefore does not result in any emission reductions. *Alternatives:* None. *Cost Effectiveness:* N/A. This rule adoption only establishes notification and reporting requirements and does not result in emission reductions; thus, cost effectiveness cannot be calculated. *Socioeconomic Impact:* Refer to Socioeconomic Impact Analysis section. *Source of Funding:* Emission Fees, CARB Subvention, Annual Operating Fees, and Permit Fees.

[Adopted April 5, 2013]

Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II; and Rule 222 – Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation I

Rule 219 was amended to expand the list of equipment with de minimis emissions from the requirement to obtain written permits. The amendments also facilitate the streamlining of the SCAQMD's permitting system. Rule 222 was amended to include additional categories to the streamlined filing/registration program of Rule 222 and to clarify and enhance the enforceability and to provide for the opportunity to appeal operating conditions issued pursuant to the provisions of the rule. *Estimated Emissions Reductions:* 139 lbs/day of NOx emissions foregone. *Alternatives:* Three feasible alternatives analyzed: Alternative A - no project; Alternative B - reduction in equipment size for asphalt day tankers and tar pots; and Alternative C - exclude power pressure washers and food ovens. *Cost Effectiveness:* N/A. *Socioeconomic Impact:* Refer to Socioeconomic Impact Analysis section. *Source of funding:* Permit Fees, Emission Fees.

[Amended May 3, 2013]

Rule 445 – Wood Burning Devices and Rule 444 - Open Burning (with the exception of amendments related to beach fire rings)

Amendments to Rule 445 and Rule 444 implemented 2012 Air Quality Management Plan (AQMP) control measures BCM-01 and BCM-02, respectively: actions to reduce PM emissions from biomass burning. Rule 445 amendments lowered the PM_{2.5} threshold used to declare a subregional wood burning curtailment day from 35 to 30 µg/m³ and established procedures for regional wood burning curtailments if the threshold was forecast to be exceeded in peak PM_{2.5} areas. Rule 445 amendments also established a labeling program for packaged and bulk firewood sellers to help inform the public of the wood burning curtailment program. Amendments to Rule 444 aligned open burning curtailments with Rule 445 provisions during winter months (November – February). The rule amendments were submitted into the State Implementation Plan (SIP). *Estimated Emission Reductions:* Rule 445 amendments could reduce wood burning emissions by up to 7.1 tons per winter day (presuming 75% rule effectiveness). Rule 444 amendments will reduce emissions during PM_{2.5} episodes; however, annual emissions reductions were not estimated as open burning would likely be shifted to other times of the year. *Alternatives:* None. *Cost-effectiveness:* N/A. *Socioeconomic Impact:* Refer to Socioeconomic Impact Analysis section. *Source of Funding:* CARB Subvention.

[Amended May 3, 2013]

Rule 1114 – Petroleum Refinery Coking Operations

Rule 1114 will reduce volatile organic compounds, particulate matter, hazardous air pollutants, sulfur compounds and methane emissions released during the delayed coking process at petroleum refineries. The rule will establish a depressurization limit of less than two pounds per square inch gauge (psig) pressure prior to venting a coke drum to atmosphere and includes options for alternative compliance schedules and interim limits for facilities not able to meet the less than two psig compliance deadline within six months of rule adoption, depending on the number of delayed coking units they operate. The rule also includes deadlines for permit applications, installation of monitoring equipment and exemptions from certain Regulation IV requirements. *Estimated Emissions Reduction:* 129 tons per year (tpy) VOC, 547 tpy CH₄ and 26 tpy HAPs. *Alternatives:* None. *Cost-effectiveness:* Average cost effectiveness is \$8,700 per ton of VOCs reduced. *Socioeconomic Impact:* Refer to Socioeconomic Impact Analysis section. *Source of Funding:* Emission Fees, Annual Operating Fees.

[Adopted May 3, 2013]

Rule 1309 - Emission Reduction Credits and Short Term Credits

Rule 1309 was amended to allow the reissuance of unused ERCs provided the request is made within two years of issuance of the Permit to Construct and construction has not commenced. *Estimated Emissions Reductions:* None. *Alternatives:* None. *Cost Effectiveness:* N/A. *Socioeconomic Impact:* Refer to Socioeconomic Impact Analysis section. *Source of funding:* Emission Fees.

[Amended July 5, 2013]

Rule 444 – Open Burning (Beach Fire Ring provisions)

Amendments to Rule 444 established spacing or buffer area requirements for beach fire rings near residential areas and clarified local government authority to identify such devices as a public nuisance. The amendments were intended to reduce localized exposure to beach goers and nearby residents from wood smoke generated by beach burning activities. *Estimated Emission Reductions:* Rule 444 PM_{2.5} emissions reductions from the beach burning requirements were estimated to be up to 0.25 ton per day if a no burn day was called during peak use periods; however, the reductions were not quantified for Air Quality Management Plan purposes and the requirements were not submitted into the SIP. *Alternatives:* None. *Cost-effectiveness:* Not calculated. *Socioeconomic Impact:* Refer to Socioeconomic Impact Analysis section. *Source of Funding:* CARB Subvention.

[Amended July 5, 2013]

Rule 314 – Fees for Architectural Coating

Rule 314 was amended to clarify certain reporting requirements. The amendment included exempting small manufacturers and certain coatings from fees provided the reports are submitted on time, removing the ability to use “grouping” in the reporting, clarifying existing definitions and reporting requirements, and removing outdated phased-in fee rates. There were no VOC reductions associated with this amendment. *Estimated Emissions Reductions:* None. *Alternatives:* None. *Cost Effectiveness:* N/A. *Socioeconomic Impact:* Refer to Socioeconomic Impact Analysis section. *Source of funding:* Area Source Fees.
[Amended September 6, 2013]

Rule 1113 – Architectural Coating

Rule 1113 was amended to provide relief to coating manufacturers from the labeling requirements for 2 fluid ounces or smaller containers, which was to go into effect on January 1, 2014. There were no VOC reductions associated with this administrative amendment. *Estimated Emissions Reductions:* None. *Alternatives:* None. *Cost Effectiveness:* N/A. *Socioeconomic Impact:* Refer to Socioeconomic Impact Analysis section. *Source of funding:* Rule 314 Fees.
[Amended September 6, 2013]

Rule 1304.1 – Electrical Generating Facility Fee for Use of Offset Exemption

Rule 1304.1 sets a fee for Electric Generating Facilities (EGFs) electing to meet their emissions offset obligations for boiler replacement projects by using offsets provided by the SCAQMD pursuant to Rule 1304(a)(2). *Estimated Emissions Reductions:* The fee proceeds will be invested in air pollution improvement strategies consistent with the Air Quality Management Plan goals. *Alternatives:* Four feasible alternatives analyzed: Alternative A - no project; Alternative B – higher fee than proposed rule; Alternative C – higher fee for EGFs that are relocating electrical generation capacity from another facility for new equipment; and Alternative D - lower fee than proposed rule. *Cost Effectiveness:* N/A. *Socioeconomic Impact:* Refer to Socioeconomic Impact Analysis section. *Source of funding:* Emission Fees.
[Adopted September 6, 2013]

Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; and, Rule 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters

Amendments to Rules 1146 and 1146.1 addressed a SIP approvability issue related to rule enforceability raised by U.S. EPA. As requested by U.S. EPA, the amended rules clarify that source test results showing emissions in excess of rule limits are considered a rule violation. The amended rules also allow diagnostic emission checks for boiler maintenance purposes. *Estimated Emissions Reduction:* None. *Alternatives:* None. *Cost-effectiveness:* N/A. *Socioeconomic Impact:* Refer to Socioeconomic Impact Analysis section. *Source of Funding:* Emission Fees.
[Amended November 1, 2013]

ALTERNATIVES TO RULES AND RULE AMENDMENTS

Projects undertaken by public agencies are subject to the California Environmental Quality Act (CEQA); thus, rules and regulations promulgated by the SCAQMD must be reviewed to determine if they are considered to be a “project” as defined by CEQA. If they are not a “project” or they are specifically exempt from CEQA, no further action is necessary. If the project has the potential to create significant adverse effects on the environment, then an environmental analysis is necessary.

The SCAQMD operates under a regulatory program certified by the Secretary for Resources pursuant to Public Resources Code (PRC) §21080.5. Certification means that the SCAQMD can incorporate its environmental analyses into documents other than environmental impact reports (EIRs), negative declarations (NDs), or mitigated NDs (MNDs). In addition, certified CEQA programs are not subject to a limited number of specific CEQA requirements identified in PRC §21080.5. All documents prepared by the SCAQMD under its certified regulatory program are called Environmental Assessments (EAs). SCAQMD rules and regulations are subject to the SCAQMD’s certified CEQA program, while plans (e.g., AQMP).

New rules or existing rules being amended often require a comprehensive environmental impact analysis. The environmental analyses in EAs include:

- * identification of significant adverse environmental impacts evaluated based on environmental checklist topics;
- * identification, if necessary, of measures to mitigate adverse environmental impacts to the greatest extent feasible;
- * if necessary, a discussion and comparison of the relative merits of feasible project alternatives that generally achieve the goals of the project, but may generate fewer or less severe adverse environmental impacts;
- * identification of environmental topics not adversely affected by the project, etc.

Supplemental EAs, Addenda, and EAs for projects determined not to have significant environmental impacts often contain a more focused analysis of potential environmental impacts. If it is concluded in these documents that no significant adverse environmental impacts would be generated by the proposed project, an analysis of project alternatives is not required. If significant adverse environmental impacts are identified, alternatives must be identified and an analysis of the relative merits of each alternative is required.

Listed below are all new and amended rules adopted by the Governing Board in 2013 by month. The type of CEQA document (including projects exempt from CEQA) is described for each new rule or rule amendment project. Alternatives are summarized for those projects requiring an alternatives analysis.

JANUARY 4, 2013

No rules were adopted or amended in January.

FEBRUARY 1, 2013

- 1. Approve Control Measure IND-01, Backstop Measure for Indirect Sources of Emissions from Ports and Port-Related Facilities, for Inclusion in Final 2012 Air Quality Management Plan:** The purpose of IND-01 is to ensure projected emissions reductions from the Ports' emission control efforts are achieved. These emission reductions were included in the baseline inventory in the 2012 Air Quality Management Plan (AQMP) such that any changes to these emissions reductions could affect the attainment demonstration. A Program Environmental Impact Report (EIR) for the 2012 AQMP, which includes IND-01, was previously prepared and certified by the SCAQMD Governing Board as being completed in compliance with CEQA on December 7, 2012; therefore no further action on the Program EIR was required. The alternative analysis for the 2012 AQMP was included in the December 2012 report for SB1928.

MARCH 1, 2013

- 1. Proposed Amended Rule 102 – Definition of Terms: Notice of Exemption:** The amendment added 1,1,1,2,3,3,3,-heptafluoropropane (commonly known as HFC-227ea) and trans-1,3,3,3-tetrafluoropropene (also known as HFO-1234ze) to the list of compounds exempt from the definition of volatile organic compound (VOC) as Group I compounds in Rule 102. U.S. EPA previously excluded HFC-227ea and HFO-1234ze from the federal definition of VOC on the basis that these compounds have negligible contribution to the formation of tropospheric ozone. These compounds have low or minimal toxicity, are not listed as hazardous air pollutants under the federal Clean Air Act, have a flammability rating equal to or less than comparable VOC compounds, have an ozone depleting potential (ODP) less than or equal to comparable compounds, and have a lower global warming potential (GWP) than comparable compounds. A notice of exemption was prepared for the proposed project. Since the proposed project was exempt from CEQA, no alternatives analysis was required.

APRIL 5, 2013

- 1. Proposed Rule 1148.2 – Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers: Notice of Exemption:** The proposed rule established notification and reporting requirements for all oil and gas well preproduction operations where air quality-related emissions may occur. Specifically, PR 1148.2 requires owners or operators of oil and gas wells to notify the SCAQMD when and where any well drilling, redrilling, reworking, hydraulic fracturing, or other well stimulation activities will occur. Following completion of the pre-production activities, PR 1148.2 would require that information be submitted that identifies the names and quantities of chemicals and other process operation parameters in order for SCAQMD to assess the air pollution emission potential of each well pre-production activity. A notice of exemption was prepared for the proposed project. Since the proposed project was exempt from CEQA, no alternatives analysis was required.

MAY 3, 2013

- 1. Amend Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II; and Amend Rule 222 – Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation I: Environmental Assessment (Environmental Impact Report equivalent document):** The proposed amendments added categories to the streamlined filing/registration program of Rule 222 and clarified and enhanced the enforceability and the ability to appeal operating conditions issued pursuant to the provisions of that rule. Rule 219 was expanded to exclude several categories of equipment with de minimis emissions from the requirement to obtain written permits. The proposed amendments further facilitated the streamlining of the SCAQMD permitting system. An Environmental Assessment was prepared that concluded the proposed amendments could generate significant adverse operational air quality impacts from NOx emission reductions foregone, therefore, an alternatives analysis was required.

The only environmental topic areas identified that could be adversely affected by the proposed project was air quality (during operation). The analysis concluded that project-specific and cumulative operational air quality impacts, specifically 139 lbs per day of NOx emission reductions foregone, would exceed the applicable regional operational significance threshold of 55 lbs per day for NOx emissions. Because of the potential for significant adverse NOx air quality impacts, an alternative analysis was prepared that included the following alternatives.

Alternative A (No Project) – Alternative A or ‘no project’ means that the proposed project would not be adopted and the current universe of equipment would continue to be subject to permitting requirements and equipment currently subject to Rules 1110.2 or 1147 would continue to be subject to the NOx emission limits according to the current compliance schedules for each rule. By continuing to subject equipment regulated by Rules 1110.2 or 1147 to NOx emission control requirements pursuant to the currently compliance schedule for certain in-use equipment categories, some equipment owners/operators would continue to experience compliance challenges with the NOx control requirements and certain compliance dates in the rules. In some cases, the effective dates may have already passed. Thus, under Alternative A, owners/operators of equipment not able to meet the applicable NOx emission limits under Rule 1110.2 or Rule 1147 would likely need to shut down the affected equipment. No significant adverse operational NOx air quality impacts would occur from shutting down non-compliant equipment under Alternative A because the NOx emission reductions would occur according to the original schedule in Rule 1147.

Alternative B (Reduction in Size) – Alternative B would result in the lowering of the affected equipment size for asphalt day tankers and tar pots. SCAQMD staff evaluated all equipment currently subject to Rules 1110.2 or 1147 proposed to be included in PARs 219 and 222 and that contribute to significant adverse operational NOx emission reductions foregone to determine if equipment size could be reduced thereby reducing the amount of NOx emission reductions foregone. The evaluation results identified only asphalt day tankers and tar pots as equipment where the size could be reduced. Therefore, Alternative B would exempt asphalt day tankers with a holding capacity of less than 4,000 gallons and tar pots with a holding capacity of less than 800 gallons per day from written permit requirements. Like the proposed project, Alternative B would continue to include filing requirements under Rule 222 for asphalt day tankers and tar pots exempted from written permit.

Alternative C (Excluded Equipment) – Alternative C would result in not including power pressure washers and food ovens in PARs 219 and 222. SCAQMD staff evaluated all equipment currently subject to Rules 1110.2 or 1147 proposed to be included in PARs 219 and 222 and that contribute to significant adverse operational NOx emission reductions foregone to determine if any equipment could be excluded from the proposed project because of the potential availability of replacement equipment powered by clean fuels, including electricity. It was concluded in the review of equipment that could be eliminated from the proposed project that only power pressure washers and small food ovens could be feasibly excluded because of the availability of potential replacements that would be operated on electricity. Therefore, Alternative C would exclude power pressure washers and food ovens from PARs 219 and 222.

The staff proposal was adopted by the Governing Board.

- 2. Proposed Amended Rule 445 – Wood Burning Devices and Proposed Amended Rule 444 - Open Burning with the exception of amendments related to beach fire rings: Notice of Exemption:** Amended Rule 445 clarified rule applicability to solid fuel cooking devices, required commercial firewood facilities to label solid fuel products for sale to inform the public of the Check Before You Burn program, lowered the PM_{2.5} concentration threshold used for the mandatory winter burning curtailment program from 35 to 30 µg/m³, and established a mechanism whereby the mandatory winter burning curtailment program would apply Basin-wide if a no burn day is forecast for a source receptor area that exceeds the 24-hour PM_{2.5} concentration threshold. Amended Rule 444 added a definition for product testing, established an exemption from Rule 444 for product testing and established winter season burn restrictions consistent with PAR 445. A notice of exemption was prepared for the proposed project. Since the proposed project was exempt from CEQA, no alternatives analysis was required.

- 3. Adopt Rule 1114 – Petroleum Refinery Coking Operations: Environmental Assessment (Negative Declaration equivalent document):** The proposed rule reduced volatile organic compounds, particulate matter, hazardous air pollutants, sulfur compounds and methane emissions released during the delayed coking process at petroleum refineries. The proposed rule established a depressurization limit of less than two pounds per square inch gauge (psig) pressure prior to venting a coke drum to atmosphere and included options for alternative compliance schedules and interim limits for facilities not able to meet the less than two psig compliance deadline within six months of rule adoption, depending on the number of delayed coking units they operate. The proposed rule also included deadlines for permit applications, installation of monitoring equipment and exemptions from certain Regulation IV requirements. An Environmental Assessment with no significant adverse impacts was prepared for this proposed project. Since no significant adverse impacts were identified from implementing the proposed project, an alternatives analysis was not required.

The staff proposal was adopted by the Governing Board.

JUNE 7, 2013

No rules were adopted or amended in June.

JULY 5, 2013

- 1. Amend Rule 1309 - Emission Reduction Credits and Short Term Credits:** The proposal allowed the reissuance of unused emission reduction credits (ERCs) provided the request is made within two years of issuance of the Permit to Construct and construction has not commenced. Staff concluded that the amendment is not a “project” within the meaning of CEQA, because it does not constitute a binding commitment to construct any project, and is essentially a fiscal activity not committing the lead agency to any course of action having environmental impacts.

JULY 12, 2013 (*Special Board Meeting*)

- 1. Amend Rule 444 – Open Burning: Notice of Exemption:** The proposed amendments to Rule 444 addressing beach burning. These provisions include paragraphs (b)(11) and (c)(7), subparagraphs (d)(3)(G) and paragraphs (d)(4), (h)(5) h(6) and (h)(7), which established buffer zones to the nearest residence; increased the distance between fire rings; established no-burn days during unfavorable meteorology or air quality conditions; empowered local jurisdictions to invoke a provision of Rule 444 to prohibit beach burning that has been declared a nuisance due to wood smoke; reduced the burning of inappropriate materials; and provided an exemption for devices made available to comply with the Americans with Disabilities Act. A notice of exemption was prepared for the proposed project. Since the proposed project was exempt from CEQA, no alternatives analysis was required.

AUGUST 2013

There was no Board meeting in August; therefore, no rules were adopted or amended.

SEPTEMBER 6, 2013

- 1. Proposed Amended Rule 314 – Fees for Architectural Coating: Notice of Exemption:** Proposed amended Rule (PAR) 314 added, removed, and amended definitions; included private labelers in the applicability section; removed the requirement allowing the reporting of product lines in lieu of individual products in annual reports; required Big Box retailers to submit annual reports to the SCAQMD; removed outdated phases in fee rate; clarified that manufactures pay current fee rate for past reporting; clarified report requirements; required fees for exempt coatings if reported late; exempted small manufactures from fees if reported on time; and exempted from fees architectural coatings offered for sale as a dry mix, containing no polymer, that are only mixed with water prior to use. In summary, the amendments to Rule 314 affected only fee and reporting requirements. A notice of exemption was prepared for the proposed project. Since the proposed project was exempt from CEQA, no alternatives analysis was required.
- 2. Proposed Amended Rule 1113 – Architectural Coating: Notice of Exemption:** PAR 1113 provided an exception from labeling requirements for containers two ounces or less, and added and amended definitions to clarify the rule. PAR 1113 clarified that open container requirements and Group II exemption prohibitions apply to colorants in addition to architectural coatings. PAR 1113 also included minor changes to improve clarity, but did not change the intent of existing requirements. A notice of exemption was prepared for the proposed project. Since the proposed project was exempt from CEQA, no alternatives analysis was required.
- 3. Proposed Rule (PR) 1304.1 – Electrical Generating Facility Fee for Use of Offset Exemption: Environmental Assessment (Environmental Impact Report equivalent document):** The purpose of PR 1304.1 – Electrical Generating Facility (EGF) Fee for Use of Offset Exemption, is to require any EGF that elects to use a specific offset exemption (Rule 1304 (a)(2)) to pay annual fees or a single, up-front fee for the amount of offsets provided by the SCAQMD. Offsets in SCAQMD internal accounts are valuable public goods. The purpose of this rule is to recoup the fair market value of offsets procured by eligible EGFs electing to use such offsets to comply with Rule 1304 (a)(2). The fee proceeds will be invested in air pollution improvement projects that further the goals of the 2012 Air Quality Management Plan (AQMP). The proposed rule affected all EGFs that elect to use the offset exemptions described in Rule 1304 (a)(2), but not those facilities that meet their emissions obligations through privately held/procured emission reduction credits (ERCs). Based on a “worst-case” analysis, the potential adverse operational air quality/GHG impacts from the adoption and implementation of the proposed project were considered significant and unavoidable. Because of the potential for significant adverse air quality/GHG impacts, an alternatives analysis was prepared that included the following alternatives.

Alternative A (No Project) – Alternative A or “no project” means that the current requirements and conditions to obtain offsets from the SCAQMD internal accounts pursuant to Rule 1304 (a)(2) would be maintained. As such, EGFs that use the specific offset exemption under Rule 1304 (a)(2) will continue to not pay for the amount of offsets provided from the SCAQMD internal accounts. The value of the offsets will not be recouped and there will be no investment in air pollution improvement projects.

Alternative B (Higher Fee) – Alternative B required EGFs that elect to use the specific offset exemption under Rule 1304 (a)(2) to pay a higher fee than listed in the proposed project for the amount of offsets provided from the SCAQMD internal accounts. While the fee rates will be modified with this alternative, the fee structure (e.g., up front lump sum or annual payment, MW size applicability, etc.) will remain the same as the proposed project. Therefore, those facilities generating less than 100 MW will pay a higher fee than currently proposed in PR1304.1 and those facilities generating greater than 100 MW will pay an even higher fee if electing to use the specific offset exemption under Rule 1304 (a)(2). The intent of this alternative is to ensure the value of the offset is reasonably recouped in order to appropriately compensate investment in air pollution improvement projects to further the goals of the AQMP. Such projects could include mobile source implementation measures such as accelerating zero and near-zero emission vehicles into the market and accelerated retirement of older vehicles. All other requirements and conditions in the proposed project would be applicable.

Alternative C (Higher Fee for Capacity Relocation) – Alternative C would require EGFs that are relocating electrical generation capacity from another facility for new equipment be subject to a higher fee than listed in the proposed project for the amount of offsets provided from the SCAQMD internal accounts. The reason for this alternative is to provide more funding for emission reduction projects since the capacity relocation projects expose people near the new location to EGF emissions that were not being emitting from that location previously. All other requirements and conditions, such as the different fee structure based on MW generation, in the proposed project would be applicable.

Alternative D (Lower Fee) – Alternative D required EGFs that use the specific offset exemption under Rule 1304 (a)(2) to pay a lower fee than listed in the proposed project for the amount of offsets provided from the SCAQMD internal accounts. The intent of this alternative is to reduce the charge to the applicable EGFs for the proposed repower projects while still recouping the partial cost of the offset in order to help provide investment in air pollution improvement projects to further the goals of the AQMP. Such projects could include mobile source implementation measures such as accelerating zero and near-zero emission vehicles into the market and accelerated retirement of older vehicles.

The staff proposal was adopted by the Governing Board.

OCTOBER 4, 2013

No rules were adopted or amended in October.

NOVEMBER 1, 2013

- 1. Proposed Amended Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; and, Proposed Amended Rule 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters: Notice of Exemption:** Amendments to Rules 1146 and 1146.1 are proposed to primarily address a State Implementation Plan (SIP) approvability issue that was raised by the United States Environmental Protection Agency (EPA) regarding the use of source test data and portable analyzers test results to prove a violation of the emission standard. Also included in the proposed amendments are the following minor changes: 1) clarification that Rules 1146 and 1146.1 do not apply to NO_x sources subject to the SCAQMD's Regulation XX – Regional Clean Air Incentives Market (RECLAIM); 2) identification of certain equipment that are not included under boiler or steam generator category; 3) enhanced description pertaining to the types of operations that would be subject to Rules 1146 and 1146.1; 4) clarification that low fuel usage equipment are only subject to periodic tune-up requirements; and, 5) prohibition from derating equipment to a level at or below two million British Thermal Units per hour (BTU/hr). A notice of exemption was prepared for the proposed project. Since the proposed project was exempt from CEQA, no alternatives analysis was required.

DECEMBER 6, 2013

No rules were adopted or amended in December.

CEQA LEAD AGENCY PROJECTS

The SCAQMD also acts as the Lead Agency under CEQA for non-SCAQMD projects where the SCAQMD typically has primary approval, i.e., discretionary permitting, authority. Under CEQA, the Lead Agency is responsible for determining whether an Environmental Impact Report (EIR), Negative Declaration or other type of CEQA document is necessary for any proposal considered to be a “project” as defined by CEQA. Further, the Lead Agency is responsible for preparing the environmental analysis, complying with all procedural requirements of CEQA, and approving the environmental documents. All documents prepared by the SCAQMD for permit projects are subject to the standard CEQA requirements.

Since January 2013, SCAQMD staff has been responsible for preparing or having prepared CEQA documents for stationary source permit projects. The lead agency projects certified by the SCAQMD in 2013 are identified below.

JANUARY, 2013

No projects were certified in January.

FEBRUARY 2013

No projects were certified in February.

MARCH 2013

No projects were certified in March.

APRIL, 2013

No projects were certified in April.

MAY 2013

No projects were certified in May.

JUNE 2013

No projects were certified in June.

JULY 24, 2013

- 1. Addendum to the Final EIR for the Chevron Products Company, El Segundo Refinery, Product Reliability and Optimization (PRO) Project:** Chevron proposed modifications to a previously approved project analyzed in the 2008 EIR for the PRO project. Changes included eliminating a previously proposed safety flame and knock-out drum determined to now not be necessary, and some minor modifications to the No. 2 Crude Unit Pressure Relief Devices (PRD) component of the 2008 PRO Project. The May 2008 Final EIR identified significant adverse air quality impacts and transportation and traffic impacts during construction. Impacts to energy, hazard and hazardous materials, hydrology and water quality, noise, and transportation and traffic during operation were analyzed and concluded to be less than significant. The proposed modifications did not change these conclusions: significant adverse air quality impacts during construction and operations and transportation and traffic impacts during construction of the PRO Project would still occur under the proposed modifications to the project, since the peak construction period has already occurred. The proposed modifications would not cause new significant adverse air quality impacts or increase the severity of significant adverse air quality impacts, or result in new significant adverse air quality impacts beyond those previously identified in the May 2008 Final EIR. Under the proposed modifications, air quality impacts during construction would be less than peak daily emissions and traffic impacts would be less because construction activities associated with the No. 2 Crude Unit PRD project component did not occur concurrently with the other PRO Project components. As a result, the proposed construction schedule resulted in fewer or less significant construction impacts. Based on the analysis of potential environmental impacts from the proposed modifications, it was concluded that the proposed modifications would not create new significant adverse impacts or increase the severity of significant impacts previously identified in the May 2008 Final EIR.

The project proponent's proposal was adopted by the by the SCAQMD's decision-making body.

AUGUST 2013

No projects were certified in August.

SEPTEMBER 2013

No projects were certified in September.

OCTOBER 2013

No projects were certified in October.

NOVEMBER 2013

No projects were certified in November.

DECEMBER 2013

No projects were certified in December.

SOCIOECONOMIC IMPACT ANALYSES

California Health and Safety Code Section 40440.8 requires that SCAQMD perform socioeconomic impact assessments for its rules and regulations that will significantly affect air quality or emissions. Prior to the requirements of Section 40440.8, SCAQMD staff had been evaluating the socioeconomic impacts of its actions pursuant to a 1989 resolution of its Governing Board. Additionally, SCAQMD staff assesses socioeconomic impacts of CEQA (California Environmental Quality Act) alternatives to those rules with significant cost and emission reduction impacts.

The elements of socioeconomic impact assessments include direct effects on various types of affected industries in terms of control costs and cost-effectiveness as well as public health benefits. Additionally, SCAQMD staff uses an economic model developed by Regional Economic Models, Inc. (REMI) to analyze the potential direct and indirect socioeconomic impacts of SCAQMD rules on Los Angeles, Riverside, Orange, and San Bernardino Counties. These impacts include, but are not limited to, employment, competitiveness, and ethnic and income distributions.

In 2013, ten rules were amended and three new rules were adopted. All ten amended rules had no significant socioeconomic impacts.

Newly-Adopted Rules

Rule 1114 – Petroleum Refinery Coking Operation - would require petroleum refineries with delayed coking units to reduce pressure in coke drums to less than two pounds per pressure inch gauge prior to venting coke drums to atmosphere. In addition, Rule 1114 would require the affected facilities to continuously monitor and record the internal pressure of coke drums, and maintain records for a period of five years.

The total annual cost of Rule 1114 is estimated to be \$1.79 million. The overall cost effectiveness of the rule is estimated to be \$8,700 per ton of VOC, which is well below the cost-effectiveness of recently adopted VOC rules. Rule 1114 is projected to create five jobs annually, on average, between 2013 and 2035. Rule 1114 is expected to reduce 129 tons of VOC, 547 tons of CH₄, and 26 tons of HAPs per year.

Rule 1148.2 – Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers - would require owners/operators of an onshore oil or gas well and their chemical suppliers to report air quality-related information on oil and gas well drilling, well working, and well completion activities. In addition, Rule 1148.2 would require chemical suppliers to report the chemical compounds contained in the drilling fluids, well completion fluids, and rework operations.

The annual compliance cost is estimated to be \$7,524 to \$83,042 for notifications, and \$60,192 to \$498,250 for equipment reporting, and another \$60,192 to \$498,250 for chemical reporting requirements, respectively. The total annual compliance cost of PR 1148.2 is estimated to be \$127,908 to \$1,079,452.

Rule 1304.1 – Electrical Generating Facility Fee for Use of Offset Exemption - would charge a fee on electrical utility steam boiler replacements for the use of the SCAQMD offsets. The fee would apply to all permits issued to electrical generating facilities (EGFs) that elect to use the offset exemptions and receive the applicable permit to construct on or after the date of adoption. The fee rates would vary by pollutant. The total fee payment would depend on the amount of offsets needed and be adjusted for annual capacity factor. Proceeds from fee payment would be invested in air pollution improvement strategies consistent with the 2012 Air Quality Management Plan (AQMP). This will partially fulfill emission reduction commitment in the ozone State Implementation Plan and help achieve the new 2012 PM_{2.5} standard.

The socioeconomic analysis evaluated the cost of the Rule 1304.1 to both EGFs and ratepayers, in addition to jobs and other socioeconomic impacts as the fees from the Rule are invested in air quality projects.

Two scenarios are proposed for the socioeconomic assessments. Both include lost generation - 1,600 megawatts (MW) - from the permanent shutdown of the San Onofre Nuclear Generating System (SONGS). Scenario 1 - Reasonable Case - is based on the upper estimate that the California Public Utilities Commission (CPUC) has authorized for new conventional gas-fired resources (2,800 MW) in the Southern California Edison (SCE) territory. Scenario 2 - ore Conservative Case - is based on the conservative projection (5,400 MW) from the California Independent System Operator (Cal ISO) for new generation needs in the SCE territory. Furthermore, it is assumed that 828 MW new generation would take place within the LADWP territory, which does not vary by scenario. The entire generation capacity for Scenarios 1 and 2 is 3,628 and 6,228 MW, respectively.

For each scenario, revenue estimates from 2015 to 2029 are provided for the single and annual payment options, respectively. It is assumed that all the generation in 2015-16 would occur in Los Angeles County and fee payments from all years are passed on to ratepayers in the form of increases in electricity rates. Revenues from boiler replacements after 2016 would be divided among Los Angeles, Orange, and San Bernardino Counties according to the ratio of 60:30:10, respectively, based on the current location of utility steam boilers and potential downwind impacts.

All the proceeds from the PR 1304.1 fee payment would be invested in projects consistent with the goal in the 2012 AQMP. Investments would take place with fees collected from the previous year due to the time required for preparation of requests for proposals and contracts. It is assumed that 20 percent of the revenue would be invested in the photovoltaic projects that are evenly split between commercial and residential properties and the remaining 80 percent would be invested in projects (cleaner trucks and industrial and construction equipment) similar to the mobile source control measures in the 2012 AQMP. The 20:80 split is based on contribution of stationary and mobile sources, respectively, to emission inventory. It is assumed that all the projects in 2016 and 2017 and zero-emission drayage truck projects would be in Los Angeles County. The rest of project money is allocated to the counties of Los Angeles, Orange, and San Bernardino based on a ratio of 60:30:10, based on the current location of utility steam boilers and potential downwind impacts.

It is estimated that Scenario 1 would generate annual proceeds from \$1.59 to \$12.05 million under the annual payment option and from \$8.3 million to \$39.69 million under the single payment option, respectively, based on new generation needs of 3,628 MW. Based on new generation needs of 6,228 megawatts, proceeds from Scenario 2 would range from \$2.67 to \$20.69 million under the annual payment option and from \$8.3 to \$66.68 million under the single payment option, respectively. It should be noted that the single payment option was added at the request of EGF stakeholders. Furthermore, the compliance cost will be invested in projects to achieve emission reductions consistent with the 2012 AQMP, and thus to partially fulfill emission reduction commitment in the ozone State Implementation Plan and help achieve the new 2012 PM_{2.5} standard.

Scenario 1 is forecast to have 104 to 141 jobs forgone annually, on average, from 2015 to 2035 while Scenario 2 would have 181 to 238 jobs forgone. In comparison these impacts are similar to past regulatory actions taken by the Governing Board. There were 8.92 million jobs in the four-county area in 2010. The average annual job impacts of PR 1304.1 are between 0.001 and 0.003 percent of the 2010 total baseline jobs.

Under both scenarios, the annual payment option has a smoother trend of job impacts while the single payment option has a wide swing of job impacts from year to year. This is because the single payment option has a front loaded fee payment schedule and the annual fee payment option shows a gradual increase in fee payments from year to year. Since the single payment option is requested by the regulated community, it is assumed that an EGF would only choose this option if it is financially beneficial to do so.

Four alternatives to the proposed amendments have been identified in the Program Environmental Assessment prepared pursuant to the California Environmental Quality Act (CEQA). Alternative A is the No Project Alternative, which would not implement the proposed rule. Alternative B - Higher Fee - would require that EGFs that use Rule 1304 (a) (2) exemption pay a higher fee which, for the purpose of this analysis, is assumed to be equivalent to two times the amount under PR 1304.1. Alternative C - Higher Fee for Capacity Relocation - would require that EGFs that relocate generation facility from one facility to another pay a higher fee which, for the purpose of this analysis is assumed to be twice the amount under PR 1304.1. Alternative D - Lower Fee - would require that EGFs that use Rule 1304 (a) (2) exemption pay a lower fee which, for the purposes of this analysis, is assumed to be equivalent to one-half the amount under PR 1304.1.

Table 1 shows average annual job impacts by CEQA alternative. Alternative A would have no job impacts because Alternative A would not implement PR 1304.1. Alternative B would have twice more jobs forgone than PR 1304.1 because fees under Alternative B are twice those under PR 1304.1. Conversely, compared to PR 1304.1, the lower job impacts of Alternative D are due to the lower fees imposed under Alternative D. Job impacts of Alternative C are lower than those of Alternative B but higher than those of Alternative D since the total fee payment under Alternative C is between the amounts for Alternative B and D. Among all the alternatives, Alternative B has highest number of jobs forgone.

TABLE 1
Average Annual Job Impact by CEQA Alternative (2015 to 2035)

| Scenario/Case | PR 1304.1 | Alternative A | Alternative B | Alternative C | Alternative D |
|------------------------------------|--------------|------------------|------------------|------------------|------------------|
| Scenario 1--Reasonable Case | | | | | |
| Single | -141 | 0 | -282 | -211 | -69 |
| Annual | -104 | 0 | -207 | -156 | -51 |
| Scenario 2--More Conservative Case | | | | | |
| Single | -238 | 0 | -482 | -359 | -118 |
| Annual | -181 | 0 | -369 | -274 | -89 |

Rule 1304.1 does not require emission reductions and is not a control measure; therefore, pursuant to Health & Safety Code section 40922, a cost-effectiveness assessment is not required.

Rule Amendments

The ten rule amendments that had no significant socioeconomic impacts were those to Rule 102 (Definition of Terms), Rule 219 (Equipment Not Requiring a Written Permit Pursuant to Regulation II and Rule 222 (Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation I); Rule 445 (Wood Burning Devices), Rule 444 (Open Burning), Rule 1309 (Emission Reduction Credits and short term Credits), Rule 314 (Fees for Architectural Coatings), Rule 1113 (Architectural Coatings), Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters, and Rule 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters.

Rule 102 – Definition of Terms - would add HFO-1233zd to the definition of Group I VOC-exempt compounds in Rule 102. HFO-1233zd is not considered as an ozone depleting substance; thus, this compound is suited for inclusion under Group I exempt compounds. The amendments would result in savings to affected facilities due to lower emission fees and would have no adverse socioeconomic impacts.

Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II and Rule 222 – Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation I - would replace both the one-time and annual fees for permitted equipment with a reduced Rule 222 initial filing fee and annual renewal fee. There are approximately 241 facilities in a wide variety of industries affected by the proposed amendments. The proposed amendments to Rules 219 and 222 will provide a net benefit to industry, since they will be able to continue business as usual, operate their equipment in the current manner, while paying significantly lower fees. Of the total \$144,462 annual reduction in costs, the largest would occur in the nondurable manufacturing (35%), construction (19%), information (13%), and services (11%) sectors.

Three alternatives to the proposed amendments were identified in the California Environmental Quality Act (CEQA) analysis. Alternative A—No Project—maintains existing permitting requirements for affected equipment and maintains all other aspects of existing rule language. Alternative B—Reduction in Rating—reduces the maximum capacity of asphalt day tankers subject to the proposed amendments from 5,000 gallons to less than 4,000 gallons. Alternative C—Excluded Equipment— would exclude affected power pressure washers and food ovens from the proposed amendments. Table 2 compares the annual and one-time fee reductions associated with the proposed amendments and CEQA alternatives. Alternative A would have no impact relative to the proposed amendments. Alternative B would remove the proposed permit exemption for eight affected large capacity (less than 4,000 gallons) asphalt day tankers. The forgone annual fee reduction from Alternative B relative to the proposed amendments would be approximately \$1,100. Alternative C would result in forgone revenue reductions of approximately \$88,000 relative to the proposed amendments. The proposed amendments would result in the greatest savings among all the CEQA alternatives.

TABLE 2
Fee Impact of Proposed Amendments and CEQA Alternatives

| CEQA Alternatives | One-Time | Annual |
|---------------------|------------|------------|
| Proposed Amendments | -\$911,073 | -\$144,462 |
| Alternative A | 0 | 0 |
| Alternative B | -\$901,544 | -\$143,363 |
| Alternative C | -\$420,546 | -\$56,941 |

Rule 445 – Wood Burning Devices; and Rule 444 - Open Burning (with the exception of amendments related to beach fire rings) - The amendments to Rule 445 would lower the PM_{2.5} threshold used to declare a mandatory winter burning curtailment from 35 µg/m³ to 30 µg/m³. In addition, the amendments would establish a Basin-wide winter burning curtailment whenever a PM_{2.5} level of greater than 30 µg/m³ is forecasted for source receptor areas that contain monitors that have recorded violations of federal PM_{2.5} standard. The amendments to Rule 445 would also require commercial facilities that sell firewood or other wood-based fuel to notify the public of the SCAQMD’s Check Before You Burn program through a labeling program.

The cost impacts of Basin-wide curtailment on firewood sellers are expected to be minimal because the number of no-burn days is expected to be very small. The majority of packaged firewood sellers are expected to comply with the labeling requirement of the proposed amendments without significant costs. Bulk firewood sellers are expected to incur a minimal cost of preparing a one-page outreach flyer with the SCAQMD’s Check Before You Burn statement. Cost impacts to the general public are also expected to be minimal as wood burning in the SCAQMD is done mainly for aesthetic purposes and there are cost-effective alternatives to burning wood for heating.

Rule 444 – Open Burning (Beach Fire Ring provisions) - would limit open burning whenever a mandatory winter burning curtailment is called under Rule 445. Any prohibition of beach burning may result in loss of revenues to the cities and entities which charge beach parking fees. State parks and local businesses could also lose revenues due to reductions in the number of visitors. Beach cities and local municipalities would lose sales tax revenues associated with the beach fire activities.

Rule 1309 – Emission Reduction Credits and Short Term Credits - allows the reissuance of unused emission reduction credits (ERCs) provided the request is made within two years of issuance of the Permit to Construct and construction has not commenced. No socioeconomic impact assessment is required because the proposed amendments do not “significantly affect air quality or emissions limitations” (Health & Safety Code Section 40440.8(a)). Nevertheless, any socioeconomic impacts would be beneficial to proposed sources as they would have the potential of recouping some of their lost investment for a source or modification that is never operated by obtaining re-issuance of the ERCs and potentially selling those ERCs to someone else.

Rule 314 – Fees for Architectural Coating - exempts smaller manufacturers from paying fees and are not expected to result in any adverse socioeconomic impacts.

Rule 1113 – Architectural Coating - would result in a cost saving to the affected manufacturers as the labels of coatings sold in two ounce or smaller containers will not have to be altered.

Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; Rule 1146.1-Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters - The amendments to Rule 1146 and Rule 1146.1 clarify that source test results showing emissions in excess of rule limits are considered a rule violation, and allow diagnostic emission checks for boiler maintenance purposes. The amendments to these rules are consistent with existing federal requirements as currently implemented, and no additional control costs are anticipated due to these rule amendments.

Regulation III – Fees

Amendments to Regulation III included inflationary cost recovery of various programs and clarification of existing rule language. The across-the-board 1.6 percent (CPI) increase in fee rates is projected to increase revenue for the FY 2013-2014 year by \$1.4 million, relative to the estimated fiscal year (FY) 2012-2013 revenue. There were few revenue implications of amendments pursuant to rule language clarifications.

Special Projects

At the 2012 AQMP hearing in December 2012, the SCAQMD Governing Board passed a resolution that would commit SCAQMD to another review of its socioeconomic analysis methods that has been performing for air quality related policies and regulations. The socioeconomic assessments were last reviewed by the Massachusetts Institute of Technology (MIT) and since then, SCAQMD staff has implemented recommendations made by MIT and worked with the regulated community and socioeconomic experts to continue refining the assessments.

During 2013, the SCAQMD staff issued a Request for Proposal (RFP) to review the socioeconomic analyses. SCAQMD has directed the selected contractor to conduct the following tasks: 1) Review socioeconomic assessments of other agencies at the federal, state and local levels, 2) Review the SCAQMD socioeconomic assessments for its strengths and weaknesses, 3) Conduct interviews of stakeholders who are regulated and affected by the SCAQMD rules and policies, and 4) Recommend future actions.

PERMITTING & COMPLIANCE

| SB 1928 REPORT | |
|--|---------------|
| Permit Applications Processed During CY 2013 | |
| Application Type | Count |
| Permits to Construct Issued | 629 |
| Permits to Operate Issued | 3,909 |
| Plans | 499 |
| Denied | 36 |
| Cancelled* | 965 |
| Change of ownership | 2,431 |
| Area Sources & Certification/Registration | 4,317 |
| Total | 12,786 |
| | |
| <i>Permits Not Renewed*</i> | 955 |

**Permit holders elected not to pay for the renewal fees; therefore the permits were not renewed.*

| SIC Code | SIC Description | PC Count | PO Count | Plans | Deny Count | Cancel Count | Area Sources | Cert Reg | Change Owner | Not Renewed |
|----------|--------------------------------|----------|----------|-------|------------|--------------|--------------|----------|--------------|-------------|
| 0111 | WHEAT | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 0119 | CASH GRAINS, NEC | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 0211 | BEEF CATTLE FEEDLOTS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0742 | VET SERV, SPECIALISTS | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0751 | LIVESTOCK SERV, EXC SPECIALIST | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0782 | LAWN AND GARDEN SERVICES | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1311 | CRUDE PETRO AND NATURAL GAS | 10 | 31 | 4 | 0 | 17 | 34 | 0 | 21 | 0 |
| 1422 | CRUSHED AND BROKEN LIMESTONE | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 1442 | CONSTRUCTION SAND AND GRAVEL | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 1446 | INDUSTRIAL SAND | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 |
| 1522 | RESIDENTIAL CONSTRUCTION, NEC | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1531 | OPERATIVE BUILDERS | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 1541 | INDUSTRIAL BUILDINGS/WAREHOUSE | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 1611 | HIGHWAY & STREET CONSTRUCTION | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 1622 | BRIDGE/TUNNEL/ELEVATED HIGHWAY | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1623 | WATER, SEWER, AND UTILITY LINE | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 |
| 1629 | HEAVY CONSTRUCTION, NEC | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 |
| 1711 | PLUMB, HEAT, AIR CONDITION | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 |
| 1721 | PAINT, PAPER HANGING, DECORAT | 1 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 1731 | ELECTRICAL WORK | 0 | 8 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 1761 | ROOFING AND SHEET METAL WORK | 0 | 1 | 0 | 0 | 4 | 1 | 0 | 0 | 5 |
| 1794 | EXCAVATING AND FOUNDATION WORK | 21 | 79 | 126 | 3 | 25 | 9 | 0 | 2 | 2 |
| 1795 | WRECKING AND DEMOLITION WORK | 0 | 0 | 0 | 0 | 1 | 10 | 0 | 0 | 0 |
| 1799 | SPECIAL TRADE CONTRACTORS, NEC | 4 | 12 | 28 | 0 | 2 | 25 | 1 | 2 | 28 |
| 2011 | MEAT PACKING PLANTS | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 2013 | SAUSAGES & OTHER PREPARED MEAT | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 2015 | POULTRY SLAUGHTERING & PROCSG | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 2021 | CREAMERY BUTTER | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 2022 | CHEESE, NATURAL AND PROCESSED | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |

| SIC Code | SIC Description | PC Count | PO Count | Plans | Deny Count | Cancel Count | Area Sources | Cert Reg | Change Owner | Not Renewed |
|----------|--------------------------------|----------|----------|-------|------------|--------------|--------------|----------|--------------|-------------|
| 2024 | ICE CREAM AND FROZEN DESSERTS | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 2026 | FLUID MILK | 0 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 2033 | CANNED FRUITS AND VEGETABLES | 1 | 5 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| 2034 | DEHYDRATED FRUITS/VEGTLB/SOUP | 0 | 3 | 0 | 0 | 3 | 1 | 0 | 0 | 0 |
| 2047 | DOG AND CAT FOOD | 6 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2048 | PREPARED FEEDS, NEC | 3 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 1 |
| 2051 | BREAD, CAKE, & RELATED PROD | 0 | 4 | 0 | 0 | 3 | 7 | 0 | 4 | 0 |
| 2077 | ANIMAL & MARINE FATS AND OILS | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2086 | BOTTLED & CANNED SOFT DRINKS | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 2087 | FLAVORING EXTRACTS/SIRUPS, NEC | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 2091 | CANNED & CURED FISH & SEAFOODS | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| 2095 | ROASTED COFFEE | 4 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| 2096 | POTATO CHIPS & SIMILAR SNACKS | 2 | 7 | 1 | 0 | 2 | 0 | 0 | 0 | 0 |
| 2099 | FOOD PREPARATIONS, NEC | 1 | 26 | 1 | 0 | 3 | 8 | 1 | 0 | 2 |
| 2257 | CIRCULAR KNIT FABRIC MILLS | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2262 | FINISHING PLANTS, SYNTHETICS | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2269 | FINISHING PLANTS, NEC | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2272 | TUFTED CARPETS AND RUGS | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2273 | CARPETS AND RUGS | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| 2281 | YARN SPINNING MILLS | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 2295 | COATED FABRICS, NOT RUBBERIZED | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2299 | TEXTILE GOODS, NEC | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 1 |
| 2361 | CHILDREN'S DRESSES AND BLOUSES | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 17 | 0 |
| 2389 | APPAREL AND ACCESSORIES, NEC | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2399 | FABRICATED TEXTILE PROD, NEC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| 2431 | MILLWORK | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 2434 | WOOD KITCHEN CABINETS | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 3 | 19 |
| 2491 | WOOD PRESERVING | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 2499 | WOOD PRODUCTS, NEC | 1 | 15 | 1 | 0 | 2 | 0 | 0 | 0 | 8 |

| SIC Code | SIC Description | PC Count | PO Count | Plans | Deny Count | Cancel Count | Area Sources | Cert Reg | Change Owner | Not Renewed |
|----------|-----------------------------------|----------|----------|-------|------------|--------------|--------------|----------|--------------|-------------|
| 2511 | WOOD HOUSEHOLD FURNITURE | 0 | 8 | 0 | 0 | 2 | 0 | 0 | 3 | 19 |
| 2512 | UPHOLSTERED HOUSEHLD FURNITURE | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2514 | METAL HOUSEHOLD FURNITURE | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2521 | WOOD OFFICE FURNITURE | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 2522 | OFFICE FURNITURE, EXCEPT WOOD | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| 2540 | PARTICIANS & FIXTURES | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2541 | WOOD PARTITIONS AND FIXTURES | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 2542 | PARTITIONS & FIXTURES, EX WOOD | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 |
| 2591 | DRAPERY HARDWARE/BLINDS/SHADES | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2599 | FURNITURE AND FIXTURES, NEC | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 4 |
| 2621 | PAPER MILLS | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2631 | PAPERBOARD MILLS | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2653 | CORRUGATED & SOLID FIBER BOXES | 2 | 8 | 0 | 0 | 4 | 0 | 0 | 18 | 1 |
| 2656 | SANITARY FOOD CONTAINERS | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2657 | FOLDING PAPERBOARD BOXES | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2672 | PAPER COATED & LAMINATED, NEC | 3 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 0 |
| 2673 | BAGS:PLASTICS,LAMNTD & COATED | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| 2679 | CONVERTED PAPER PRODUCTS, NEC | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2711 | NEWSPAPERS | 4 | 2 | 0 | 0 | 2 | 1 | 0 | 2 | 1 |
| 2732 | BOOK PRINTING | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2741 | MISC PUBLISHING | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2751 | COMMERCIAL PRINT/LETTERPRESS | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2752 | COMMERCIAL PRINT/LITHOGRAPH | 17 | 18 | 0 | 0 | 9 | 1 | 0 | 14 | 34 |
| 2759 | COMMERCIAL PRINTING, NEC | 5 | 14 | 1 | 0 | 2 | 0 | 0 | 0 | 2 |
| 2813 | INDUSTRIAL GASES | 0 | 2 | 0 | 0 | 2 | 2 | 0 | 1 | 0 |
| 2819 | INDUSTRIAL INORGANIC CHMLS,NEC | 14 | 12 | 0 | 0 | 2 | 0 | 0 | 0 | 1 |
| 2821 | PLASTICS MATERIALS AND RESINS | 0 | 28 | 2 | 0 | 0 | 4 | 0 | 0 | 1 |

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|----------|--------------------------------|----------|----------|-------|------------|--------------|--------------|----------|--------------|-------------|
| 2823 | CELLULOSIC MAN-MADE FIBERS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2831 | BIOLOGICAL PRODUCTS | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 2833 | MEDICINALS AND BOTANICALS | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2834 | PHARMACEUTICAL PREPARATIONS | 1 | 46 | 1 | 0 | 2 | 14 | 3 | 0 | 3 |
| 2835 | DIAGNOSTIC SUBSTANCES | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 2836 | BIOLOGICAL PRDTS EXC DIAGNOSTC | 0 | 0 | 1 | 0 | 2 | 2 | 0 | 0 | 0 |
| 2841 | SOAPS AND OTHER DETERGENTS | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 2844 | TOILET PREPARATIONS | 0 | 10 | 0 | 0 | 4 | 2 | 0 | 6 | 0 |
| 2851 | PAINTS AND ALLIED PRODUCTS | 1 | 26 | 0 | 0 | 3 | 0 | 1 | 33 | 2 |
| 2869 | INDUSTRIAL ORGANIC CHMLS, NEC | 4 | 30 | 0 | 0 | 6 | 0 | 0 | 22 | 0 |
| 2875 | FERTILIZERS, MIXING ONLY | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| 2891 | ADHESIVES AND SEALANTS | 4 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 0 |
| 2899 | CHEMICAL PREPARATIONS, NEC | 4 | 5 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| 2911 | PETROLEUM REFINING | 43 | 320 | 51 | 2 | 200 | 3 | 0 | 376 | 11 |
| 2951 | PAVING MIXTURES AND BLOCKS | 2 | 39 | 1 | 0 | 7 | 0 | 0 | 0 | 0 |
| 2952 | ASPHALT FELTS AND COATINGS | 1 | 24 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| 2992 | LUBRICATING OILS AND GREASES | 4 | 6 | 0 | 0 | 5 | 0 | 0 | 0 | 0 |
| 2999 | PETROLEUM & COAL PRODUCTS, NEC | 0 | 5 | 1 | 0 | 1 | 2 | 0 | 3 | 0 |
| 3021 | RUBBER AND PLASTICS FOOTWEAR | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3053 | GASKETS, PACKING/SEALING DVCS | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3061 | MECHANICAL RUBBER GOODS | 0 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 3069 | FABRICATED RUBBER PRODUCTS,NEC | 1 | 17 | 0 | 0 | 0 | 3 | 0 | 3 | 3 |
| 3081 | UNSUPPORTED PLSTCS FILM/SHEET | 6 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 4 |
| 3082 | UNSUPPORTD PLSTCS PROFL SHAPES | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 |
| 3083 | LAMINATED PLSTCS PLATE & SHEET | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 3084 | PLASTICS PIPE | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 3085 | PLASTICS BOTTLES | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 3086 | PLASTICS FOAM PRODUCTS | 1 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 3087 | CUSTOM COMPOUND PRCHSD RESINS | 0 | 12 | 1 | 0 | 0 | 2 | 0 | 0 | 0 |

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|----------|--------------------------------|----------|----------|-------|------------|--------------|--------------|----------|--------------|-------------|
| 3088 | PLASTICS PLUMBING FIXTURES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3089 | PLASTICS PRODUCTS, NEC | 8 | 21 | 0 | 1 | 6 | 0 | 1 | 0 | 18 |
| 3211 | FLAT GLASS | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3229 | PRESSED AND BLOWN GLASS, NEC | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3231 | PRODUCTS OF PURCHASED GLASS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3241 | CEMENT, HYDRAULIC | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3251 | BRICK AND STRUCTURAL CLAY TILE | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| 3259 | STRUCTURAL CLAY PRODUCTS, NEC | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 3261 | VITREOUS PLUMBING FIXTURES | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3269 | POTTERY PRODUCTS, NEC | 0 | 5 | 0 | 0 | 6 | 0 | 0 | 10 | 0 |
| 3271 | CONCRETE BLOCK AND BRICK | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3272 | CONCRETE PRODUCTS, NEC | 1 | 9 | 0 | 0 | 1 | 0 | 0 | 2 | 1 |
| 3273 | READY-MIXED CONCRETE | 6 | 26 | 0 | 0 | 6 | 0 | 0 | 44 | 5 |
| 3275 | GYPSUM PRODUCTS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3291 | ABRASIVE PRODUCTS | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3295 | MINERALS, GROUND OR TREATED | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 3299 | NONMETALLIC MIN. PRODUCTS, NEC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| 3312 | BLAST FURNACES AND STEEL MILLS | 8 | 19 | 0 | 0 | 5 | 0 | 0 | 0 | 2 |
| 3315 | STEEL WIRE & RELATED PRODUCTS | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3321 | GRAY IRON FOUNDRIES | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3324 | STEEL INVESTMENT FOUNDRIES | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 3339 | PRIMARY NONFERROUS METALS, NEC | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 3341 | SECONDARY NONFERROUS METALS | 5 | 22 | 1 | 0 | 8 | 0 | 0 | 0 | 0 |
| 3354 | ALUMINUM EXTRUDED PRODUCTS | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3363 | ALUMINUM DIE-CASTINGS | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3365 | ALUMINUM FOUNDRIES | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 4 |
| 3366 | COPPER FOUNDRIES | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3369 | NONFERROUS FOUNDRIES, NEC | 0 | 3 | 0 | 0 | 0 | 4 | 0 | 0 | 3 |
| 3398 | METAL HEAT TREATING | 4 | 6 | 0 | 0 | 7 | 1 | 0 | 0 | 0 |

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| 3411 | METAL CANS | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| 3412 | METAL BARRELS, DRUMS, & PAILS | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 3433 | HEATING EQPMT, EXC ELECTRIC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 0 |
| 3441 | FABRICATED STRUCTURAL METAL | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 3443 | FABRICATE PLATE WK-BOILER SHOP | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3444 | SHEET METALWORK | 8 | 11 | 0 | 0 | 1 | 0 | 0 | 29 | 0 |
| 3446 | ARCHITECTURAL METAL WORK | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3449 | MISCELLANEOUS METAL WORK | 1 | 11 | 0 | 0 | 0 | 0 | 0 | 2 | 3 |
| 3451 | SCREW MACHINE PRODUCTS | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3452 | BOLTS, NUTS, RIVETS, & WASHERS | 0 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 3462 | IRON AND STEEL FORGINGS | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 3463 | NONFERROUS FORGINGS | 0 | 31 | 0 | 0 | 0 | 4 | 0 | 30 | 0 |
| 3471 | PLATING AND POLISHING | 26 | 98 | 0 | 1 | 25 | 9 | 0 | 75 | 20 |
| 3479 | METAL COATING/ALLIED SERVICES | 15 | 70 | 1 | 0 | 6 | 2 | 0 | 7 | 13 |
| 3483 | AMMUNITION EXC SMALL ARMS, NEC | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3489 | ORDNANCE AND ACCESSORIES, NEC | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 3491 | INDUSTRIAL VALVES | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 3492 | FLUID PWR VLVS/HOSE FITTINGS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 |
| 3493 | STEEL SPRINGS, EXC WIRE | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 3494 | VALVES AND PIPE FITTINGS, NEC | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 3496 | MISC FABRICATED WIRE PRODUCTS | 1 | 5 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| 3497 | METAL FOIL AND LEAF | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3499 | FABRICATED METAL PRODUCTS, NEC | 1 | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 3523 | FARM MACHINERY AND EQUIPMENT | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3531 | CONSTRUCTION MACHINERY | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |
| 3537 | INDUSTRIAL TRUCKS AND TRACTORS | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3541 | MACHINE TOOLS METAL CUT TYPES | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 3542 | MACHINE TOOLS, METAL FORM TYPE | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3544 | SPEC DIES/TOOLS/JIGS/FIXTURES | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

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| 3549 | METALWORKING MACHINERY, NEC | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3559 | SPECIAL INDUSTRY MACHINERY, NEC | 0 | 4 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| 3562 | BALL AND ROLLER BEARINGS | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3565 | PACKAGING MACHINERY | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3569 | GENERAL INDSTRL MACHINERY, NEC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| 3577 | COMPUTER PERIPHERAL EQPMT, NEC | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3579 | OFFICE MACHINES, NEC | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 3589 | SERVICE INDUSTRY MACHINERY, NEC | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 3594 | FLUID POWER PUMPS AND MOTORS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 3599 | INDUSTRIAL MACHINERY, NEC | 0 | 13 | 0 | 0 | 3 | 0 | 0 | 1 | 0 |
| 3613 | SWITCHGEAR & SWTCHBRD APARATUS | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 3621 | MOTORS AND GENERATORS | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 3625 | RELAYS AND INDUSTRIAL CONTROLS | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3629 | ELECTRICAL IND APPARATUS, NEC | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3632 | HOUSEHOLD REFRIG AND FREEZERS | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3645 | RESIDENTIAL LIGHTING FIXTURES | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3646 | COMMERCIAL LIGHTING FIXTURES | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3651 | RADIO AND TV RECEIVING SETS | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 3 | 0 |
| 3652 | PHONOGRAPH RECORDS | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| 3662 | RADIO & TV COMMUNICATION EQUIP | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 3663 | RADIO/TV COMMUNICATIONS EQPMT | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 0 |
| 3669 | COMMUNICATIONS EQUIPMENT, NEC | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 3671 | ELECTRON TUBES | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 3672 | PRINTED CIRCUIT BOARDS | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 3674 | SEMICONDUCTORS/RELATED DEVICES | 0 | 20 | 0 | 0 | 1 | 2 | 0 | 0 | 0 |
| 3678 | ELECTRONIC CONNECTORS | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 3679 | ELECTRONIC COMPONENTS, NEC | 26 | 19 | 0 | 0 | 28 | 1 | 0 | 0 | 0 |
| 3691 | STORAGE BATTERIES | 0 | 4 | 0 | 0 | 0 | 2 | 0 | 25 | 0 |

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| 3693 | X-RAY APPARATUS AND TUBES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 3694 | ENGINE ELECTRICAL EQUIPMENT | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3713 | TRUCK AND BUS BODIES | 1 | 2 | 0 | 0 | 3 | 1 | 0 | 0 | 0 |
| 3714 | MOTOR VEHICLE PARTS/ACCESORIES | 0 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| 3721 | AIRCRAFT | 17 | 20 | 1 | 0 | 4 | 11 | 0 | 0 | 0 |
| 3724 | AIRCRAFT ENGINES/ENGINE PARTS | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 3728 | AIRCRAFT PARTS/EQUIPMENT, NEC | 21 | 59 | 0 | 0 | 7 | 8 | 0 | 3 | 0 |
| 3731 | SHIP BUILDING AND REPAIRING | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3761 | GUIDED MISSILES AND SPACE VEH | 7 | 6 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 3764 | SPACE PROPULSION UNITS & PARTS | 0 | 15 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| 3769 | SPACE VEHICLE EQUIPMENT, NEC | 2 | 4 | 1 | 0 | 0 | 2 | 0 | 2 | 0 |
| 3812 | SEARCH & NAVIGATION EQUIPMENT | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| 3823 | PROCESS CONTROL INSTRUMENTS | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| 3826 | ANALYTICAL INSTRUMENTS | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| 3827 | OPTICAL INSTRUMENTS AND LENSES | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3829 | MEASURING/CONTROLLING DVCS,NEC | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3841 | SURGICAL & MEDICAL INSTRUMENTS | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 3842 | SURGICAL APPLIANCES & SUPPLIES | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 |
| 3843 | DENTAL EQUIPMENT AND SUPPLIES | 0 | 5 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 3845 | ELECTROMEDICAL EQUIPMENT | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 3861 | PHOTOGRAPHIC EQUIPMENT/SUPPLY | 0 | 3 | 0 | 0 | 1 | 1 | 0 | 0 | 1 |
| 3911 | JEWELRY, PRECIOUS METAL | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3931 | MUSICAL INSTRUMENTS | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3944 | GAMES, TOYS, & CHILDRENS VEH | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 3961 | COSTUME JEWELRY | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3993 | SIGNS & ADVERTISING DISPLAYS | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3995 | BURIAL CASKETS | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3996 | HARD SURFACE FLOOR COVERINGS | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 3999 | MANUFACTURING INDUSTRIES, NEC | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |

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| 4011 | RAILROAD, LINE-HAUL OPERATING | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| 4013 | SWITCHING & TERMINAL SERVICES | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 4111 | LOCAL & SUBURBAN TRANSIT | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4212 | LOCAL TRUCKING,WITHOUT STORAGE | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 1 | 34 |
| 4213 | TRUCKING, EXCEPT LOCAL | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 4221 | FARM PRODUCT WAREHOUSE/STORAGE | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 4225 | GEN WAREHOUSING & STORAGE | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 0 |
| 4226 | SPECIAL WAREHOUSING/STRGE ,NEC | 1 | 25 | 3 | 0 | 11 | 1 | 0 | 0 | 0 |
| 4311 | U.S. POSTAL SERVICE | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 |
| 4411 | DEEP SEA FOREIGN TRANS | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4412 | DEEP SEA FRGN TRANS OF FRGHT | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4491 | MARINE CARGO HANDLING | 1 | 9 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| 4512 | AIR TRANSPORTATION, SCHDL | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 4513 | AIR COURIER SERVICES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4581 | AIRPORTS/FLYING FIELDS/SVCS | 2 | 13 | 2 | 0 | 22 | 1 | 2 | 0 | 4 |
| 4613 | REFINED PETROLEUM PIPE LINES | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 31 | 0 |
| 4729 | PASSENGER TRANS ARRNGMNT, NEC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 4731 | FREIGHT TRANS ARRANGEMENT | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4789 | TRANSPORTATION SERVICES, NEC | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 |
| 4811 | TELEPHONE COMMUNICATION | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 0 |
| 4812 | RADIOTELEPHONE COMMUNICATIONS | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4813 | TELEPHONE COMMS, EXC RADIO | 0 | 14 | 1 | 0 | 0 | 4 | 1 | 1 | 0 |
| 4833 | TV BROADCASTING STATIONS | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 4841 | CABLE & OTHER PAY TV SERVICES | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4899 | COMMUNICATION SERVICES, NEC | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4911 | ELECTRIC SERVICES | 13 | 75 | 5 | 0 | 53 | 27 | 0 | 4 | 1 |
| 4922 | NATURAL GAS TRANSMISSION | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4923 | GAS TRANSMISSION/DISTRIBUTION | 0 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |

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| 4924 | NATURAL GAS DISTRIBUTION | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 4925 | GAS PRODUCTION AND/OR DISTRIB | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |
| 4931 | ELECTRIC & OTHER SERVICES COMB | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 4932 | GAS & OTHER SERVICES COMBINED | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4939 | COMBINATION UTILITY SERV, NEC | 2 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| 4941 | WATER SUPPLY | 3 | 52 | 14 | 2 | 10 | 28 | 1 | 0 | 0 |
| 4952 | SEWERAGE SYSTEMS | 13 | 52 | 4 | 0 | 28 | 1 | 1 | 0 | 1 |
| 4953 | REFUSE SYSTEMS | 12 | 25 | 11 | 0 | 7 | 50 | 0 | 14 | 3 |
| 4959 | SANITARY SERVICES, NEC | 0 | 1 | 0 | 0 | 6 | 0 | 0 | 0 | 0 |
| 4961 | STEAM SUPPLY | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 5012 | AUTO & OTHER MOTOR VEHICLES | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5014 | TIRES AND TUBES | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 5031 | LUMBER, PLYWOOD & MILLWORK | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 5032 | BRICK, STONE, & RELATED MATLS | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5033 | ROOFING, SIDING, & INSULATION | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5039 | CONSTRUCTION MATERIALS, NEC | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5041 | SPORTING & RECREATIONAL GOODS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 5045 | COMPUTERS, PERIPHERALS & SFTWR | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 5047 | MEDICAL AND HOSPITAL EQUIPMENT | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| 5082 | CONSTRUCTION/MINING MACHINERY | 0 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 5084 | INDUSTRIAL MACHINERY AND EQPMT | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5085 | INDUSTRIAL SUPPLIES | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| 5087 | SERVICE ESTABLISHMENT EQUIP | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5088 | TRANSPORTATION EQUIP/SUPPLIES | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 5092 | TOYS & HOBBY GOODS & SUPPLIES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| 5093 | SCRAP & WASTE MATERIALS | 2 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 5099 | DURABLE GOODS, NEC | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 5141 | GROCERIES, GENERAL LINE | 0 | 0 | 1 | 0 | 0 | 9 | 0 | 9 | 0 |
| 5142 | FROZEN FOODS | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |

| SIC Code | SIC Description | PC Count | PO Count | Plans | Deny Count | Cancel Count | Area Sources | Cert Reg | Change Owner | Not Renewed |
|----------|--------------------------------|----------|----------|-------|------------|--------------|--------------|----------|--------------|-------------|
| 5149 | GROCERIES/RELATED PRODUCTS,NEC | 0 | 1 | 0 | 0 | 0 | 67 | 0 | 52 | 0 |
| 5169 | CHEMICALS & ALLIED PRDCTS, NEC | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 2 | 0 |
| 5171 | PETRO BULK STATIONS/TERMINALS | 10 | 67 | 14 | 0 | 42 | 0 | 1 | 186 | 1 |
| 5199 | NONDURABLE GOODS, NEC | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 5211 | LUMBER & OTHER BLDG MATERIALS | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 5311 | DEPARTMENT STORES | 0 | 1 | 0 | 0 | 0 | 28 | 1 | 1 | 0 |
| 5399 | MISC GNRL MERCHANDISE STORES | 0 | 1 | 1 | 0 | 0 | 8 | 0 | 0 | 0 |
| 5411 | GROCERY STORES | 0 | 3 | 0 | 0 | 1 | 284 | 0 | 22 | 0 |
| 5511 | NEW AND USED CAR DEALERS | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 11 | 0 |
| 5531 | AUTO & HOME SUPPLY STORES | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5541 | GASOLINE SERVICE STATIONS | 0 | 103 | 1 | 0 | 7 | 8 | 0 | 325 | 16 |
| 5611 | MEN'S & BOYS' CLOTHING & FURN | 1 | 12 | 0 | 0 | 12 | 1 | 0 | 0 | 0 |
| 5621 | WOMEN'S READY-TO-WEAR STORES | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 5641 | CHILRESN'S/INFANTS' WEAR STORE | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5699 | MISC APPAREL & ACCESSORIES | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 5712 | FURNITURE STORES | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5734 | COMPUTER AND SOFTWARE STORES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| 5812 | EATING PLACES | 0 | 1 | 0 | 0 | 0 | 11 | 0 | 0 | 24 |
| 5912 | DRUG STORES/PROPRIETARY STORES | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 5941 | SPORTING GOODS & BICYCLE SHOPS | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 5946 | CAMERA/PHOTOGRAPH SUPPLY STORE | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5961 | MAIL ORDER HOUSES | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 5983 | FUEL OIL DEALERS | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5984 | LIQUEFIED PETROLEUM GAS DEALER | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5999 | MISCELLANEOUS RETAIL STORE,NEC | 0 | 0 | 0 | 1 | 0 | 7 | 0 | 0 | 0 |
| 6021 | NATIONAL COMMERCIAL BANKS | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 3 | 1 |
| 6035 | FEDERAL SAVINGS INSTITUTIONS | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |

| SIC Code | SIC Description | PC Count | PO Count | Plans | Deny Count | Cancel Count | Area Sources | Cert Reg | Change Owner | Not Renewed |
|----------|----------------------------------|----------|----------|-------|------------|--------------|--------------|----------|--------------|-------------|
| 6162 | MORTGAGE BANKERS & CORRESPOND | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 6211 | SECURITY BROKERS AND DEALERS | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 6311 | LIFE INSURANCE | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 6321 | ACCIDENT AND HEALTH INSURANCE | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6371 | PENSION/HEALTH/WELFARE FUNDS | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 |
| 6411 | INSURANCE AGENTS/BROKERS/SVCS | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 |
| 6512 | NONRESIDENTIAL BLDG OPERATORS | 0 | 1 | 2 | 0 | 2 | 38 | 0 | 23 | 1 |
| 6513 | APARTMENT BLDG OPERATORS | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 |
| 6519 | REAL PROPERTY LESSORS, NEC | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 6531 | REAL ESTATE AGENTS/MANAGERS | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 2 | 0 |
| 6552 | SUBDIVIDERS & DEVELOPERS, NEC | 0 | 0 | 1 | 1 | 0 | 3 | 1 | 1 | 0 |
| 6711 | HOLDING OFFICES | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 6719 | HOLDING COMPANIES, NEC | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| 7011 | HOTELS, MOTELS & TOURIST COURT | 3 | 4 | 1 | 0 | 0 | 46 | 1 | 20 | 2 |
| 7213 | LINEN SUPPLY | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 7216 | DRY CLEANING PLANTS, EXC RUG | 0 | 59 | 0 | 0 | 1 | 4 | 0 | 60 | 51 |
| 7218 | INDUSTRIAL LAUNDRETERS | 0 | 3 | 0 | 0 | 0 | 4 | 0 | 1 | 0 |
| 7219 | LAUNDRY AND GARMENT SVCS, NEC | 0 | 2 | 0 | 0 | 0 | 8 | 0 | 1 | 2 |
| 7261 | FUNERAL SERVICE & CREMATORIES | 5 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7299 | MISCELLANEOUS PERSONAL SVCS, NEC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| 7311 | ADVERTISING AGENCIES | 0 | 2 | 0 | 0 | 1 | 3 | 0 | 2 | 0 |
| 7323 | CREDIT REPORTING SERVICES | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 7349 | BUILDING MAINTENANCE SVCS, NEC | 1 | 5 | 0 | 0 | 4 | 8 | 0 | 2 | 0 |
| 7353 | HEAVY CONSTRUCTION EQPMT RENTL | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 7359 | EQUIPMENT RENTAL & LEASING, NEC | 0 | 2 | 1 | 0 | 0 | 6 | 0 | 6 | 0 |
| 7389 | BUSINESS SERVICES, NEC | 2 | 0 | 1 | 0 | 0 | 3 | 0 | 8 | 0 |
| 7399 | BUSINESS SERVICES, NEC | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7512 | PASSENGER CAR RENTAL & LEASING | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| SIC Code | SIC Description | PC Count | PO Count | Plans | Deny Count | Cancel Count | Area Sources | Cert Reg | Change Owner | Not Renewed |
|----------|--------------------------------|----------|----------|-------|------------|--------------|--------------|----------|--------------|-------------|
| 7514 | PASSENGER CAR RENTAL | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7521 | AUTOMOBILE PARKING | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7523 | PARKING LOTS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 7531 | TOP & BODY REPAIR SHOPS | 8 | 11 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 7532 | TOP & BODY REPAIR/PAINT SHOPS | 19 | 117 | 0 | 2 | 8 | 0 | 0 | 95 | 53 |
| 7533 | AUTO EXHAUST SYST REPAIR SHOPS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 7534 | TIRE RETREADING & REPAIR SHOPS | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7535 | PAINT SHOPS | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 4 |
| 7537 | AUTO TRANSMISSION REPAIR SHOPS | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7538 | GENERAL AUTO REPAIR SHOPS | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 24 | 20 |
| 7539 | AUTO REPAIR SHOPS, NEC | 0 | 5 | 0 | 0 | 0 | 1 | 0 | 11 | 5 |
| 7542 | CAR WASHES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 |
| 7549 | AUTOMOTIVE SERVICES, NEC | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 4 | 2 |
| 7629 | ELECTRICAL REPAIR SHOPS, NEC | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |
| 7641 | REUPHOLSTERY/FURNITURE REPAIR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 |
| 7812 | MOTION PICTURE & VIDEO PRDNTN | 1 | 16 | 1 | 0 | 5 | 5 | 0 | 0 | 1 |
| 7819 | SERV ALLIED TO MOTION PICTURES | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 2 | 2 |
| 7832 | MOTION PIC THEATER EX DRIVE-IN | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7992 | PUBLIC GOLF COURSES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| 7996 | AMUSEMENT PARKS | 0 | 0 | 0 | 0 | 1 | 67 | 0 | 0 | 0 |
| 7997 | MEMBERSHIP SPORTS/REC CLUBS | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 4 | 1 |
| 7999 | AMUSEMENT AND RECREATION, NEC | 0 | 6 | 1 | 0 | 0 | 4 | 1 | 0 | 0 |
| 8011 | OFFICE/CLINICS OF MDCL DOCTORS | 0 | 3 | 1 | 0 | 0 | 12 | 0 | 0 | 0 |
| 8049 | OFFICES OF HLTH PRACTNRS, NEC | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8051 | SKILLED NURSING CARE FACILITY | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 8052 | INTERMEDIATE CARE FACILITIES | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 8059 | NURSING AND PERSONAL CARE, NEC | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 8062 | GENERAL MED/SURGICAL HOSPITALS | 1 | 41 | 2 | 0 | 7 | 31 | 3 | 5 | 4 |
| 8063 | PSYCHIATRIC HOSPITALS | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |

| SIC Code | SIC Description | PC Count | PO Count | Plans | Deny Count | Cancel Count | Area Sources | Cert Reg | Change Owner | Not Renewed |
|----------|--------------------------------|----------|----------|-------|------------|--------------|--------------|----------|--------------|-------------|
| 8069 | SPEC HOSPITAL, EXC PSYCHIATRIC | 0 | 4 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 8071 | MEDICAL LABORATORIES | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 8081 | OUTPATIENT CARE FACILITIES | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 8211 | ELEMENTARY & SECONDARY SCHOOLS | 0 | 9 | 0 | 0 | 1 | 52 | 2 | 0 | 9 |
| 8221 | COLLEGES & UNIVERSITIES, NEC | 0 | 42 | 4 | 0 | 3 | 41 | 4 | 0 | 0 |
| 8222 | JUNIOR COLLEGES | 0 | 5 | 0 | 0 | 0 | 22 | 1 | 0 | 1 |
| 8249 | VOCATIONAL SCHOOLS, NEC | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8299 | SCHOOLS/EDUCATIONAL SVCS,NEC | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 8322 | INDIVIDUAL AND FAMILY SERVICES | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 8331 | JOB TRAINING & RELATED SERVICE | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8412 | MUSEUMS AND ART GALLERIES | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 8611 | BUSINESS ASSOCIATIONS | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 8621 | PROFESSIONAL ORGANIZATIONS | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 8641 | CIVIC & SOCIAL ASSOCIATIONS | 0 | 1 | 0 | 0 | 0 | 10 | 0 | 1 | 0 |
| 8699 | MEMBERSHIP ORGANIZATIONS, NEC | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 8711 | ENGINEERING SERVICES | 0 | 18 | 2 | 0 | 10 | 0 | 0 | 0 | 1 |
| 8712 | ARCHITECTURAL SERVICES | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 8731 | COMMERCIAL PHYSICAL RESEARCH | 0 | 8 | 0 | 0 | 0 | 2 | 0 | 1 | 0 |
| 8734 | TESTING LABORATORIES | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8742 | MANAGEMENT CONSULTING SERVICES | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 6 | 0 |
| 8744 | FACILITIES SUPPORT SERVICES | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9111 | EXECUTIVE OFFICES | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 9131 | EXECUTIVE & LEGISLATIVE COMB | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9199 | GENERAL GOVERNMENT, NEC | 0 | 24 | 7 | 0 | 4 | 21 | 2 | 3 | 1 |
| 9211 | COURTS | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| 9221 | PUBLIC PROTECTION | 0 | 7 | 1 | 1 | 1 | 2 | 2 | 0 | 0 |
| 9223 | CORRECTIONAL INSTITUTIONS | 0 | 9 | 0 | 0 | 2 | 1 | 1 | 0 | 0 |

| SIC Code | SIC Description | PC Count | PO Count | Plans | Deny Count | Cancel Count | Area Sources | Cert Reg | Change Owner | Not Renewed |
|----------|--------------------------------|------------|-------------|------------|------------|--------------|--------------|------------|--------------|-------------|
| 9224 | FIRE PROTECTION | 0 | 4 | 0 | 0 | 0 | 0 | 2 | 3 | 1 |
| 9411 | ADMIN. OF EDUCATIONAL PROGRAMS | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 9431 | ADMIN OF PUBLIC HEALTH PROGRAM | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 9511 | AIR WATER & SOLID WASTE MANAG | 2 | 7 | 2 | 0 | 0 | 1 | 0 | 0 | 0 |
| 9532 | URBAN & COMMUNITY DEVELOPMENT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| 9611 | ADMIN OF GEN ECONOMIC PROGRAMS | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9621 | REG, ADMIN OF TRANSPORTATION | 0 | 0 | 1 | 0 | 0 | 8 | 0 | 0 | 0 |
| 9631 | REG, ADMIN OF UTILITIES | 5 | 17 | 0 | 0 | 6 | 2 | 0 | 0 | 0 |
| 9661 | SPACE RESEARCH & TECHNOLOGY | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9711 | NATIONAL SECURITY | 6 | 6 | 0 | 0 | 1 | 4 | 0 | 0 | 0 |
| 9721 | INTERNATIONAL AFFAIRS | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9999 | UNKNOWN | 122 | 1295 | 158 | 14 | 200 | 2810 | 166 | 603 | 432 |
| | Total | 629 | 3909 | 499 | 36 | 965 | 4105 | 212 | 2431 | 955 |

**Annual Publication of Emission Reduction Credit (ERC) And Short Term Emission Reduction Credit (STERC) Transactions for Fiscal Year 2012-13⁴
(California Health and Safety Code Section 40452)**

Pursuant to paragraph (c) of section 40452 of the California Health and Safety Code, this report summarizes data on emission offset transactions and applications, by pollutant, during the previous fiscal year. Note that during Fiscal Year 2012-13, no applications were denied for a permit for a new source for the reason of failure to provide the required emission offsets.

Table 1 summarizes privately held Emission Reduction Credit (ERC) and Short Term Emission Reduction Credit (STERC) transactions for Fiscal Year 2012-13, including totals, by pollutant, of the number of emission offset transactions and the quantity of emission offsets transferred in units of pounds per day and tons per year. Table 2 summarizes ERC banking applications processed during Fiscal Year 2012-13, including the number of newly generated STERCs by pollutant in units of pounds per day and tons per year.

Tables 3 and 4 provide details on the amount of each emission offset transaction and processed ERC banking application, respectively.

Table 1: Emission Offset Transactions – Fiscal Year 2012-13

| Criteria Pollutant | Number of Emission Offset Transfer Transactions ⁵ | | | | Quantity of Emission Offsets Transferred ⁶ (lb/day) | | | | Annualized Quantity of Emission Offsets Transferred ³ (ton/year) | | | |
|--------------------|--|--------------------|--------------------|-------|---|--------------------|--------------------|-------|--|--------------------|--------------------|-------|
| | ERC | STERC ⁷ | STERC ⁸ | TOTAL | ERC | STERC ⁴ | STERC ⁵ | TOTAL | ERC | STERC ⁴ | STERC ⁵ | TOTAL |
| ROG | 46 | 8 | 12 | 66 | 897 | 87 | 169 | 1,153 | 163.7 | 15.9 | 30.8 | 210.4 |
| NOx | 5 | 1 | 17 | 23 | 58 | 5 | 128 | 191 | 10.6 | 0.9 | 23.4 | 34.9 |
| SOx | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 2 | 0.4 | 0 | 0 | 0.4 |
| CO | 4 | 0 | 0 | 4 | 90 | 0 | 0 | 90 | 16.4 | 0 | 0 | 16.4 |
| PM10 | 15 | 4 | 0 | 19 | 200 | 20 | 0 | 220 | 36.5 | 3.7 | 0 | 40 |

Table 2: Emission Offset Applications – Fiscal Year 2012-13

| Criteria Pollutant | Number of Banking Applications Resulting in the Issuance of New STERCs ⁹ | Quantity of Emission Reductions Achieved (STERCs) ¹⁰ (lb/day) | Annualized Quantity of Emission Reductions Achieved ⁷ (ton/year) |
|--------------------|---|---|--|
| ROG | 8 | 251 | 45.8 |
| NOx | 0 | 0 | 0 |
| SOx | 0 | 0 | 0 |
| CO | 0 | 0 | 0 |
| PM ₁₀ | 8 | 30 | 5.3 |

⁴ This report does not include RECLAIM Trading Credit (RTC) transactions.

⁵ Includes all emission offset certificates that transferred ownership.

⁶ Includes the total amount of emission offsets transferred.

⁷ STERC transfer transactions including the “yearly increments” and the “permanent credit” (designated with an ending year of “9999”) as described in Rule 1309.

⁸ STERC transfer transactions including only the “yearly increments” as described in Rule 1309.

⁹ Includes all emission offset applications resulting in the generation of new certificates.

¹⁰ Includes the total amount of emission offsets generated.

Table 3: Emission Offset Transaction Summary – Fiscal Year 2012-13
Sorted by Pollutant and Amount

| SCAQMD NO. | POLLUTANT | AMOUNT ¹¹ (LB/DAY) | AMOUNT ⁸ (TON/YR) | TYPE | START YEAR | END YEAR |
|------------|-----------|----------------------------------|---------------------------------|-------|------------|----------|
| SC1213-001 | ROG | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-002 | ROG | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-003 | ROG | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-004 | ROG | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-005 | ROG | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-006 | ROG | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-007 | ROG | 1 | 0.2 | STERC | 2018 | 9999 |
| SC1213-008 | ROG | 1 | 0.2 | ERC | N/A | N/A |
| SC1213-009 | ROG | 1 | 0.2 | ERC | N/A | N/A |
| SC1213-010 | ROG | 1 | 0.2 | ERC | N/A | N/A |
| SC1213-011 | ROG | 2 | 0.4 | ERC | N/A | N/A |
| SC1213-012 | ROG | 2 | 0.4 | ERC | N/A | N/A |
| SC1213-013 | ROG | 2 | 0.4 | ERC | N/A | N/A |
| SC1213-014 | ROG | 2 | 0.4 | ERC | N/A | N/A |
| SC1213-015 | ROG | 2 | 0.4 | ERC | N/A | N/A |
| SC1213-016 | ROG | 2 | 0.4 | STERC | 2013 | 2013 |
| SC1213-017 | ROG | 2 | 0.4 | STERC | 2013 | 2103 |
| SC1213-018 | ROG | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-019 | ROG | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-020 | ROG | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-021 | ROG | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-022 | ROG | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-023 | ROG | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-024 | ROG | 3 | 0.5 | STERC | 2018 | 9999 |
| SC1213-025 | ROG | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-026 | ROG | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-027 | ROG | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-028 | ROG | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-029 | ROG | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-030 | ROG | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-031 | ROG | 3 | 0.5 | STERC | 2018 | 9999 |
| SC1213-032 | ROG | 3 | 0.5 | ERC | N/A | N/A |
| SC1213-033 | ROG | 3 | 0.5 | ERC | N/A | N/A |
| SC1213-034 | ROG | 3 | 0.5 | ERC | N/A | N/A |
| SC1213-035 | ROG | 3 | 0.5 | ERC | N/A | N/A |
| SC1213-036 | ROG | 4 | 0.7 | ERC | N/A | N/A |
| SC1213-037 | ROG | 4 | 0.7 | STERC | 2013 | 2013 |
| SC1213-038 | ROG | 4 | 0.7 | ERC | N/A | N/A |
| SC1213-039 | ROG | 5 | 0.9 | ERC | N/A | N/A |
| SC1213-040 | ROG | 5 | 0.9 | ERC | N/A | N/A |
| SC1213-041 | ROG | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-042 | ROG | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-043 | ROG | 0 | 0 | STERC | 2014 | 2014 |

¹¹ Only long term emission offsets, those that have an ending year of 9999, or the offsets with the greatest year in instances where a trade did not include the long term emission offset are quantified to avoid over counting.

| SCAQMD NO. | POLLUTANT | AMOUNT ¹¹ (LB/DAY) | AMOUNT ⁸ (TON/YR) | TYPE | START YEAR | END YEAR |
|------------|-----------|----------------------------------|---------------------------------|-------|------------|----------|
| SC1213-044 | ROG | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-045 | ROG | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-046 | ROG | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-047 | ROG | 0 | 0 | STERC | 2018 | 2018 |
| SC1213-048 | ROG | 5 | 0.9 | STERC | 2019 | 9999 |
| SC1213-049 | ROG | 5 | 0.9 | ERC | N/A | N/A |
| SC1213-050 | ROG | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-051 | ROG | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-052 | ROG | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-053 | ROG | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-054 | ROG | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-055 | ROG | 5 | 0.9 | STERC | 2018 | 9999 |
| SC1213-056 | ROG | 6 | 1.1 | ERC | N/A | N/A |
| SC1213-057 | ROG | 6 | 1.1 | ERC | N/A | N/A |
| SC1213-058 | ROG | 6 | 1.1 | ERC | N/A | N/A |
| SC1213-059 | ROG | 6 | 1.1 | STERC | 2013 | 2013 |
| SC1213-060 | ROG | 6 | 1.1 | ERC | N/A | N/A |
| SC1213-061 | ROG | 6 | 1.1 | ERC | N/A | N/A |
| SC1213-062 | ROG | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-063 | ROG | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-064 | ROG | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-065 | ROG | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-066 | ROG | 6 | 1.1 | STERC | 2017 | 9999 |
| SC1213-067 | ROG | 7 | 1.3 | ERC | N/A | N/A |
| SC1213-068 | ROG | 7 | 1.3 | ERC | N/A | N/A |
| SC1213-069 | ROG | 7 | 1.3 | ERC | N/A | N/A |
| SC1213-070 | ROG | 7 | 1.3 | ERC | N/A | N/A |
| SC1213-071 | ROG | 8 | 1.5 | ERC | N/A | N/A |
| SC1213-072 | ROG | 9 | 1.6 | ERC | N/A | N/A |
| SC1213-073 | ROG | 9 | 1.6 | ERC | N/A | N/A |
| SC1213-074 | ROG | 10 | 1.8 | ERC | N/A | N/A |
| SC1213-075 | ROG | 11 | 2 | ERC | N/A | N/A |
| SC1213-076 | ROG | 11 | 2 | ERC | N/A | N/A |
| SC1213-077 | ROG | 12 | 2.2 | ERC | N/A | N/A |
| SC1213-078 | ROG | 13 | 2.4 | ERC | N/A | N/A |
| SC1213-079 | ROG | 13 | 2.4 | STERC | 2013 | 2013 |
| SC1213-080 | ROG | 13 | 2.4 | STERC | 2013 | 2013 |
| SC1213-081 | ROG | 15 | 2.7 | ERC | N/A | N/A |
| SC1213-082 | ROG | 15 | 2.7 | STERC | 2013 | 2013 |
| SC1213-083 | ROG | 15 | 2.7 | STERC | 2013 | 2013 |
| SC1213-084 | ROG | 16 | 2.9 | ERC | N/A | N/A |
| SC1213-085 | ROG | 16 | 2.9 | ERC | N/A | N/A |
| SC1213-086 | ROG | 17 | 3.1 | STERC | 2013 | 2013 |
| SC1213-087 | ROG | 18 | 3.3 | STERC | 2013 | 2013 |
| SC1213-088 | ROG | 19 | 3.5 | STERC | 2013 | 2013 |
| SC1213-089 | ROG | 20 | 3.7 | ERC | N/A | N/A |
| SC1213-090 | ROG | 25 | 4.6 | ERC | N/A | N/A |

| SCAQMD NO. | POLLUTANT | AMOUNT ¹¹ (LB/DAY) | AMOUNT ⁸ (TON/YR) | TYPE | START YEAR | END YEAR |
|--------------|-----------|----------------------------------|---------------------------------|-------|------------|----------|
| SC1213-091 | ROG | 25 | 4.6 | ERC | N/A | N/A |
| SC1213-092 | ROG | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-093 | ROG | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-094 | ROG | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-095 | ROG | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-096 | ROG | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-097 | ROG | 0 | 0 | STERC | 2018 | 2018 |
| SC1213-098 | ROG | 32 | 5.8 | STERC | 2019 | 9999 |
| SC1213-099 | ROG | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-100 | ROG | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-101 | ROG | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-102 | ROG | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-103 | ROG | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-104 | ROG | 0 | 0 | STERC | 2018 | 2018 |
| SC1213-105 | ROG | 32 | 5.8 | STERC | 2019 | 9999 |
| SC1213-106 | ROG | 38 | 6.9 | ERC | N/A | N/A |
| SC1213-107 | ROG | 45 | 8.2 | STERC | 2013 | 2013 |
| SC1213-108 | ROG | 50 | 9.1 | ERC | N/A | N/A |
| SC1213-109 | ROG | 50 | 9.1 | ERC | N/A | N/A |
| SC1213-110 | ROG | 109 | 19.9 | ERC | N/A | N/A |
| SC1213-111 | ROG | 172 | 31.4 | ERC | N/A | N/A |
| SC1213-112 | ROG | 172 | 31.4 | ERC | N/A | N/A |
| Total | | 1,153 | 210.3 | | N/A | |

| SCAQMD NO. | POLLUTANT | AMOUNT ⁸ (LB/DAY) | AMOUNT ⁸ (TON/YR) | TYPE | START YEAR | END YEAR |
|------------|-----------|---------------------------------|---------------------------------|-------|------------|----------|
| SC1213-113 | NOx | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-114 | NOx | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-115 | NOx | 1 | 0.2 | STERC | 2015 | 2015 |
| SC1213-116 | NOx | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-117 | NOx | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-118 | NOx | 1 | 0.2 | STERC | 2015 | 2015 |
| SC1213-119 | NOx | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-120 | NOx | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-121 | NOx | 1 | 0.2 | STERC | 2015 | 2015 |
| SC1213-122 | NOx | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-123 | NOx | 1 | 0.2 | STERC | 2015 | 2015 |
| SC1213-124 | NOx | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-125 | NOx | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-126 | NOx | 1 | 0.2 | STERC | 2015 | 2015 |
| SC1213-127 | NOx | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-128 | NOx | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-129 | NOx | 1 | 0.2 | STERC | 2015 | 2015 |
| SC1213-130 | NOx | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-131 | NOx | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-132 | NOx | 1 | 0.2 | STERC | 2015 | 2015 |
| SC1213-133 | NOx | 0 | 0 | STERC | 2013 | 2013 |

| SCAQMD NO. | POLLUTANT | AMOUNT ⁸ (LB/DAY) | AMOUNT ⁸ (TON/YR) | TYPE | START YEAR | END YEAR |
|------------|-----------|------------------------------|------------------------------|-------|------------|----------|
| SC1213-134 | NOx | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-135 | NOx | 1 | 0.2 | STERC | 2015 | 2015 |
| SC1213-136 | NOx | 1 | 0.2 | STERC | 2013 | 2013 |
| SC1213-137 | NOx | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-138 | NOx | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-139 | NOx | 2 | 0.4 | STERC | 2015 | 2015 |
| SC1213-140 | NOx | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-141 | NOx | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-142 | NOx | 2 | 0.4 | STERC | 2015 | 2015 |
| SC1213-143 | NOx | 2 | 0.4 | ERC | N/A | N/A |
| SC1213-144 | NOx | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-145 | NOx | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-146 | NOx | 3 | 0.5 | STERC | 2015 | 2015 |
| SC1213-147 | NOx | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-148 | NOx | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-149 | NOx | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-150 | NOx | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-151 | NOx | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-152 | NOx | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-153 | NOx | 5 | 0.9 | STERC | 2018 | 9999 |
| SC1213-154 | NOx | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-155 | NOx | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-156 | NOx | 6 | 1.1 | STERC | 2015 | 2015 |
| SC1213-157 | NOx | 9 | 1.6 | ERC | N/A | N/A |
| SC1213-158 | NOx | 12 | 2.2 | ERC | N/A | N/A |
| SC1213-159 | NOx | 12 | 2.2 | ERC | N/A | N/A |
| SC1213-160 | NOx | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-161 | NOx | 19 | 3.5 | STERC | 2013 | 2013 |
| SC1213-162 | NOx | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-163 | NOx | 19 | 3.5 | STERC | 2013 | 2013 |
| SC1213-164 | NOx | 23 | 4.2 | ERC | N/A | N/A |
| SC1213-165 | NOx | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-166 | NOx | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-167 | NOx | 34 | 6.2 | STERC | 2014 | 2014 |
| SC1213-168 | NOx | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-169 | NOx | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-170 | NOx | 34 | 6.2 | STERC | 2014 | 2014 |
| Total | | 191 | 35.1 | N/A | | |

| SCAQMD NO. | POLLUTANT | AMOUNT ⁸ (LB/DAY) | AMOUNT ⁸ (TON/YR) | TYPE | START YEAR | END YEAR |
|------------|-----------|------------------------------|------------------------------|------|------------|----------|
| SC1213-171 | SOx | 2 | 0.4 | ERC | N/A | N/A |
| Total | | 2 | 0.4 | N/A | | |

| SCAQMD NO. | POLLUTANT | AMOUNT ⁸ (LB/DAY) | AMOUNT ⁸ (TON/YR) | TYPE | START YEAR | END YEAR |
|------------|-----------|------------------------------|------------------------------|------|------------|----------|
|------------|-----------|------------------------------|------------------------------|------|------------|----------|

| | | | | | | |
|--------------|----|-----------|-------------|------------|-----|-----|
| SC1213-172 | CO | 1 | 0.2 | ERC | N/A | N/A |
| SC1213-173 | CO | 1 | 0.2 | ERC | N/A | N/A |
| SC1213-174 | CO | 11 | 2 | ERC | N/A | N/A |
| SC1213-175 | CO | 77 | 14.1 | ERC | N/A | N/A |
| Total | | 90 | 16.5 | N/A | | |

| SCAQMD NO. | POLLUTANT | AMOUNT ⁸ (LB/DAY) | AMOUNT ⁸ (TON/YR) | TYPE | START YEAR | END YEAR |
|--------------|------------------|------------------------------|------------------------------|------------|------------|----------|
| SC1213-176 | PM ₁₀ | 1 | 0.2 | ERC | N/A | N/A |
| SC1213-177 | PM ₁₀ | 1 | 0.2 | ERC | N/A | N/A |
| SC1213-178 | PM ₁₀ | 1 | 0.2 | ERC | N/A | N/A |
| SC1213-179 | PM ₁₀ | 1 | 0.2 | ERC | N/A | N/A |
| SC1213-180 | PM ₁₀ | 2 | 0.4 | ERC | N/A | N/A |
| SC1213-181 | PM ₁₀ | 3 | 0.5 | ERC | N/A | N/A |
| SC1213-182 | PM ₁₀ | 3 | 0.5 | ERC | N/A | N/A |
| SC1213-183 | PM ₁₀ | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-184 | PM ₁₀ | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-185 | PM ₁₀ | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-186 | PM ₁₀ | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-187 | PM ₁₀ | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-188 | PM ₁₀ | 4 | 0.7 | STERC | 2018 | 9999 |
| SC1213-189 | PM ₁₀ | 4 | 0.7 | ERC | N/A | N/A |
| SC1213-190 | PM ₁₀ | 4 | 0.7 | ERC | N/A | N/A |
| SC1213-191 | PM ₁₀ | 4 | 0.7 | ERC | N/A | N/A |
| SC1213-192 | PM ₁₀ | 4 | 0.7 | ERC | N/A | N/A |
| SC1213-193 | PM ₁₀ | 4 | 0.7 | ERC | N/A | N/A |
| SC1213-194 | PM ₁₀ | 4 | 0.7 | STERC | 2012 | 9999 |
| SC1213-195 | PM ₁₀ | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-196 | PM ₁₀ | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-197 | PM ₁₀ | 4 | 0.7 | STERC | 2015 | 9999 |
| SC1213-198 | PM ₁₀ | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-199 | PM ₁₀ | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-200 | PM ₁₀ | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-201 | PM ₁₀ | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-202 | PM ₁₀ | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-203 | PM ₁₀ | 8 | 1.5 | STERC | 2018 | 9999 |
| SC1213-204 | PM ₁₀ | 14 | 2.6 | ERC | N/A | N/A |
| SC1213-205 | PM ₁₀ | 40 | 7.3 | ERC | N/A | N/A |
| SC1213-206 | PM ₁₀ | 114 | 20.8 | ERC | N/A | N/A |
| Total | | 220 | 40 | N/A | | |

Table 4: Emission Offset Application Summary – Fiscal Year 2012-13
Sorted by Pollutant and Amount

| SCAQMD NO. | POLLUTANT | AMOUNT ¹² (LB/DAY) | AMOUNT ⁹ (TON/YR) | TYPE | START YEAR | END YEAR |
|------------|-----------|-------------------------------|------------------------------|-------|------------|----------|
| SC1213-207 | ROG | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-208 | ROG | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-209 | ROG | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-210 | ROG | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-211 | ROG | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-212 | ROG | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-213 | ROG | 0 | 0 | STERC | 2018 | 2018 |
| SC1213-214 | ROG | 4 | 0.7 | STERC | 2019 | 9999 |
| SC1213-215 | ROG | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-216 | ROG | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-217 | ROG | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-218 | ROG | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-219 | ROG | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-220 | ROG | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-221 | ROG | 0 | 0 | STERC | 2018 | 2018 |
| SC1213-222 | ROG | 6 | 1.1 | STERC | 2019 | 9999 |
| SC1213-223 | ROG | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-224 | ROG | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-225 | ROG | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-226 | ROG | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-227 | ROG | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-228 | ROG | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-229 | ROG | 0 | 0 | STERC | 2018 | 2018 |
| SC1213-230 | ROG | 13 | 2.4 | STERC | 2019 | 9999 |
| SC1213-231 | ROG | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-232 | ROG | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-233 | ROG | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-234 | ROG | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-235 | ROG | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-236 | ROG | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-237 | ROG | 0 | 0 | STERC | 2018 | 2018 |
| SC1213-238 | ROG | 15 | 2.7 | STERC | 2019 | 9999 |
| SC1213-239 | ROG | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-240 | ROG | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-241 | ROG | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-242 | ROG | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-243 | ROG | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-244 | ROG | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-245 | ROG | 0 | 0 | STERC | 2018 | 2018 |
| SC1213-246 | ROG | 15 | 2.7 | STERC | 2019 | 9999 |
| SC1213-247 | ROG | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-248 | ROG | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-249 | ROG | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-250 | ROG | 0 | 0 | STERC | 2015 | 2015 |

¹² Only long term emission offsets, those that have an ending year of 9999, are quantified to avoid over counting.

| SCAQMD NO. | POLLUTANT | AMOUNT ¹² (LB/DAY) | AMOUNT ⁹ (TON/YR) | TYPE | START YEAR | END YEAR |
|--------------|-----------|-------------------------------|------------------------------|-------|------------|----------|
| SC1213-251 | ROG | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-252 | ROG | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-253 | ROG | 0 | 0 | STERC | 2018 | 2018 |
| SC1213-254 | ROG | 18 | 3.3 | STERC | 2019 | 9999 |
| SC1213-255 | ROG | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-256 | ROG | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-257 | ROG | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-258 | ROG | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-259 | ROG | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-260 | ROG | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-261 | ROG | 0 | 0 | STERC | 2018 | 2018 |
| SC1213-262 | ROG | 82 | 15 | STERC | 2019 | 9999 |
| SC1213-263 | ROG | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-264 | ROG | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-265 | ROG | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-266 | ROG | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-267 | ROG | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-268 | ROG | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-269 | ROG | 0 | 0 | STERC | 2018 | 2018 |
| SC1213-270 | ROG | 98 | 17.9 | STERC | 2019 | 9999 |
| Total | | 251 | 45.8 | | N/A | |

| SCAQMD NO. | POLLUTANT | AMOUNT ⁹ (LB/DAY) | AMOUNT ⁹ (TON/YR) | TYPE | START YEAR | END YEAR |
|------------|------------------|------------------------------|------------------------------|-------|------------|----------|
| SC1213-271 | PM ₁₀ | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-272 | PM ₁₀ | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-273 | PM ₁₀ | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-274 | PM ₁₀ | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-275 | PM ₁₀ | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-276 | PM ₁₀ | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-277 | PM ₁₀ | 0 | 0 | STERC | 2018 | 2018 |
| SC1213-278 | PM ₁₀ | 2 | 0.4 | STERC | 2019 | 9999 |
| SC1213-279 | PM ₁₀ | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-280 | PM ₁₀ | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-281 | PM ₁₀ | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-282 | PM ₁₀ | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-283 | PM ₁₀ | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-284 | PM ₁₀ | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-285 | PM ₁₀ | 0 | 0 | STERC | 2018 | 2018 |
| SC1213-286 | PM ₁₀ | 3 | 0.5 | STERC | 2019 | 9999 |
| SC1213-287 | PM ₁₀ | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-288 | PM ₁₀ | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-289 | PM ₁₀ | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-290 | PM ₁₀ | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-291 | PM ₁₀ | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-292 | PM ₁₀ | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-293 | PM ₁₀ | 0 | 0 | STERC | 2018 | 2018 |
| SC1213-294 | PM ₁₀ | 4 | 0.7 | STERC | 2019 | 9999 |
| SC1213-295 | PM ₁₀ | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-296 | PM ₁₀ | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-297 | PM ₁₀ | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-298 | PM ₁₀ | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-299 | PM ₁₀ | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-300 | PM ₁₀ | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-301 | PM ₁₀ | 0 | 0 | STERC | 2018 | 2018 |
| SC1213-302 | PM ₁₀ | 4 | 0.7 | STERC | 2019 | 9999 |
| SC1213-303 | PM ₁₀ | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-304 | PM ₁₀ | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-305 | PM ₁₀ | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-306 | PM ₁₀ | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-307 | PM ₁₀ | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-308 | PM ₁₀ | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-309 | PM ₁₀ | 0 | 0 | STERC | 2018 | 2018 |
| SC1213-310 | PM ₁₀ | 4 | 0.7 | STERC | 2019 | 9999 |
| SC1213-311 | PM ₁₀ | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-312 | PM ₁₀ | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-313 | PM ₁₀ | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-314 | PM ₁₀ | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-315 | PM ₁₀ | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-316 | PM ₁₀ | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-317 | PM ₁₀ | 0 | 0 | STERC | 2018 | 2018 |

| SCAQMD NO. | POLLUTANT | AMOUNT ⁹ (LB/DAY) | AMOUNT ⁹ (TON/YR) | TYPE | START YEAR | END YEAR |
|--------------|------------------|------------------------------|------------------------------|-------|------------|----------|
| SC1213-318 | PM ₁₀ | 4 | 0.7 | STERC | 2019 | 9999 |
| SC1213-319 | PM ₁₀ | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-320 | PM ₁₀ | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-321 | PM ₁₀ | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-322 | PM ₁₀ | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-323 | PM ₁₀ | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-324 | PM ₁₀ | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-325 | PM ₁₀ | 0 | 0 | STERC | 2018 | 2018 |
| SC1213-326 | PM ₁₀ | 4 | 0.7 | STERC | 2019 | 9999 |
| SC1213-327 | PM ₁₀ | 0 | 0 | STERC | 2012 | 2012 |
| SC1213-328 | PM ₁₀ | 0 | 0 | STERC | 2013 | 2013 |
| SC1213-329 | PM ₁₀ | 0 | 0 | STERC | 2014 | 2014 |
| SC1213-330 | PM ₁₀ | 0 | 0 | STERC | 2015 | 2015 |
| SC1213-331 | PM ₁₀ | 0 | 0 | STERC | 2016 | 2016 |
| SC1213-332 | PM ₁₀ | 0 | 0 | STERC | 2017 | 2017 |
| SC1213-333 | PM ₁₀ | 0 | 0 | STERC | 2018 | 2018 |
| SC1213-334 | PM ₁₀ | 5 | 0.9 | STERC | 2019 | 9999 |
| Total | | 30 | 5.3 | | N/A | |

**CHAPTER II
BUDGET AND FORECAST**

*[For information on this chapter, please see the SCAQMD's FY 2014-15
Draft Budget and Work Program]*

CHAPTER III
CLEAN FUELS ANNUAL REPORT FOR 2013/2014

[An independent report to the Legislature on the Clean Fuels Program is required by March 31 of each year pursuant to Health and Safety Code 40448.5.1. The Clean Fuels Annual Report is included here as Chapter III.]

**CHAPTER IV
ANNUAL RECLAIM AUDIT REPORT
FOR 2012 COMPLIANCE YEAR**

DRAFT BUDGET & DRAFT WORK PROGRAM

FISCAL YEAR 2014-2015



**SOUTH COAST
AIR QUALITY MANAGEMENT DISTRICT**

DRAFT BUDGET & DRAFT WORK PROGRAM

FISCAL YEAR 2014-2015

Prepared by Finance
Michael B. O'Kelly, Chief Financial Officer



**SOUTH COAST
AIR QUALITY MANAGEMENT DISTRICT**

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**SOUTH COAST
AIR QUALITY MANAGEMENT DISTRICT**

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

GOVERNING BOARD

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County of Riverside
Cities Representative

BARRY R. WALLERSTEIN, D.Env.
Executive Officer



**SOUTH COAST
AIR QUALITY MANAGEMENT DISTRICT**



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

April 4, 2014

South Coast Air Quality Management District Board and Stakeholders

Transmittal of the Executive Officer's Draft Fiscal Year 2014-15 Budget and Work Program

This proposed draft Budget and Work Program for FY 2014-15 is a balanced budget which continues SCAQMD's commitment to protecting public health and efficient operations while meeting program requirements. Since 1991-92, when legislation went into effect limiting the agency's fee authority, the SCAQMD has successfully reduced staffing and program costs despite increased program complexities. The proposed level of expenditures and revenue for FY 2014-15 is \$132.2 million with staffing of 798 funded positions. Compared to the early nineties when SCAQMD staffing was at 1,163 positions, this year's request reflects 31% less staffing and a modest increase in expenditures of 17% over the 1991-92 adopted budget. Adjusting for inflation, this expenditure proposal is 25% less than the 1991-92 adopted budget.

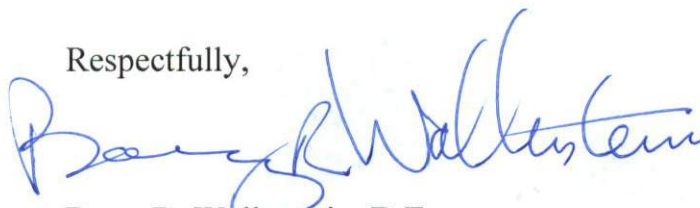
In comparison to the FY 2013-14 adopted budget, the FY 2014-15 proposed budget represents a \$3.0 million increase in total expenditures and revenues. The revenue budget includes a proposed CPI fee adjustment of 1.6% plus an additional fee adjustment of 3% in FY 2014-15 and an additional 3% in FY 2015-16 for Annual Operating Permit Renewal and Permit Processing Fees to better align program costs with revenues. The increase in expenditures is a result of increases in building operating costs and retirement contribution rates, with some increases offset by the continued effort to streamline operations. In addition, the proposed budget and five year projection address continued increases in retirement contribution rates and critical infrastructure improvement projects needed as result of the aging systems within our headquarters building.

The public and the business community have multiple opportunities to participate in the budget development process. These include meetings of the Budget Advisory Committee which is made up of representatives from the business and environmental communities, a

public workshop to discuss the proposed budget and work program, and two meetings of the Governing Board.

In summary, I am proposing a balanced budget for FY 2014-15 that allows our programs to operate efficiently and in a manner sensitive to businesses and the public yet addresses the need to continue streamlining our operations. SCAQMD will continue its efforts to make progress toward attaining the federal and state clean air mandates in the most cost-effective manner possible.

Respectfully,



Barry R. Wallerstein, D.Env.
Executive Officer

BRW:MBO



GOVERNMENT FINANCE OFFICERS ASSOCIATION

*Distinguished
Budget Presentation
Award*

PRESENTED TO

**South Coast Air Quality Management District
California**

For the Fiscal Year Beginning

July 1, 2013

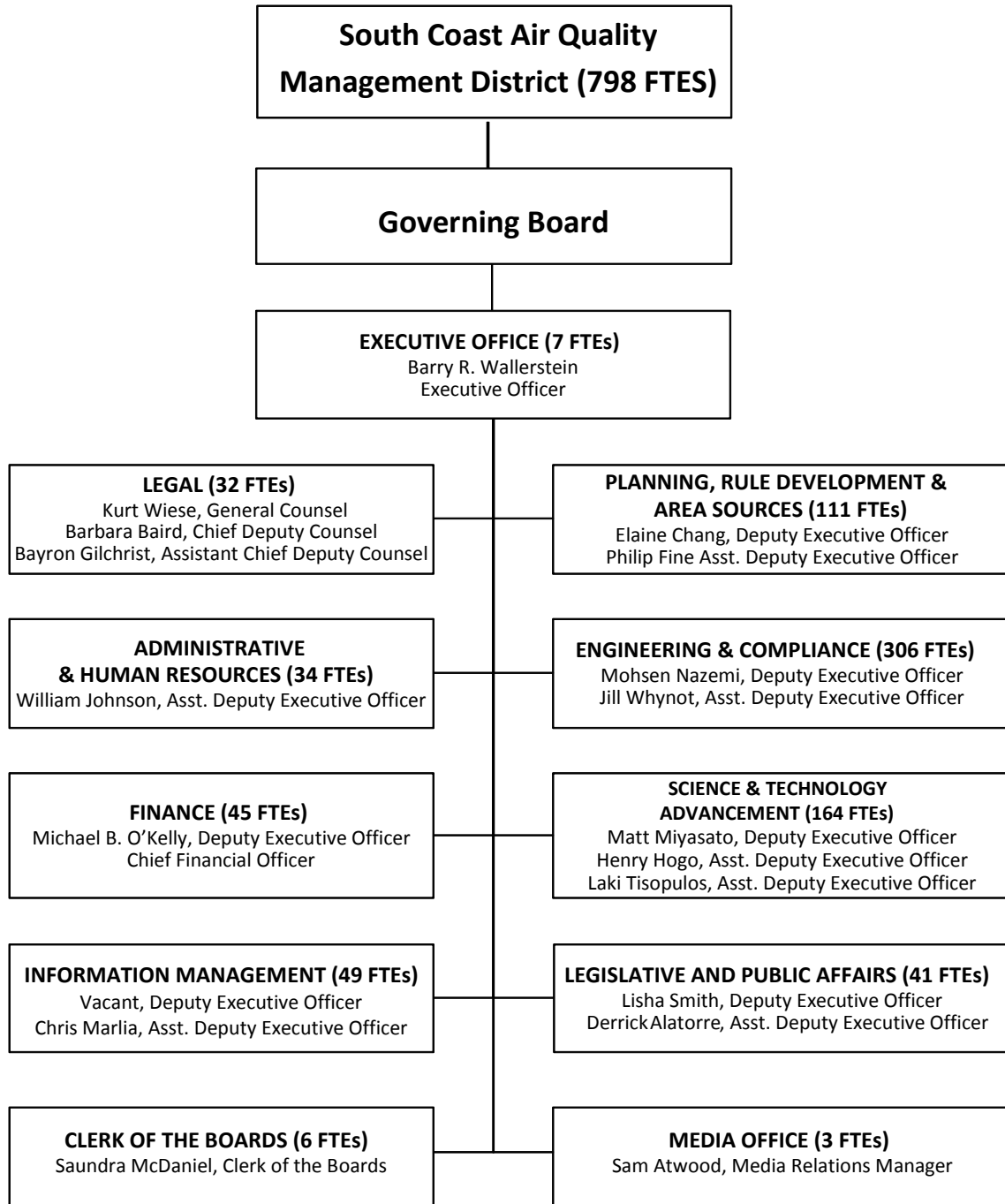
Executive Director

The Government Finance Officers Association of the United States and Canada (GFOA) presented a Distinguished Budget Presentation Award to the South Coast Air Quality Management District for its Annual Budget beginning July 1, 2013. In order to receive this award, a governmental unit must publish a budget document that meets program criteria as a policy document, operations guide, financial plan and communications device.

This award is valid for a period of one year only. We believe our current budget continues to conform to program requirements, and we are submitting it to GFOA to determine its eligibility for another award.



**SOUTH COAST
AIR QUALITY MANAGEMENT DISTRICT**





**SOUTH COAST
AIR QUALITY MANAGEMENT DISTRICT**

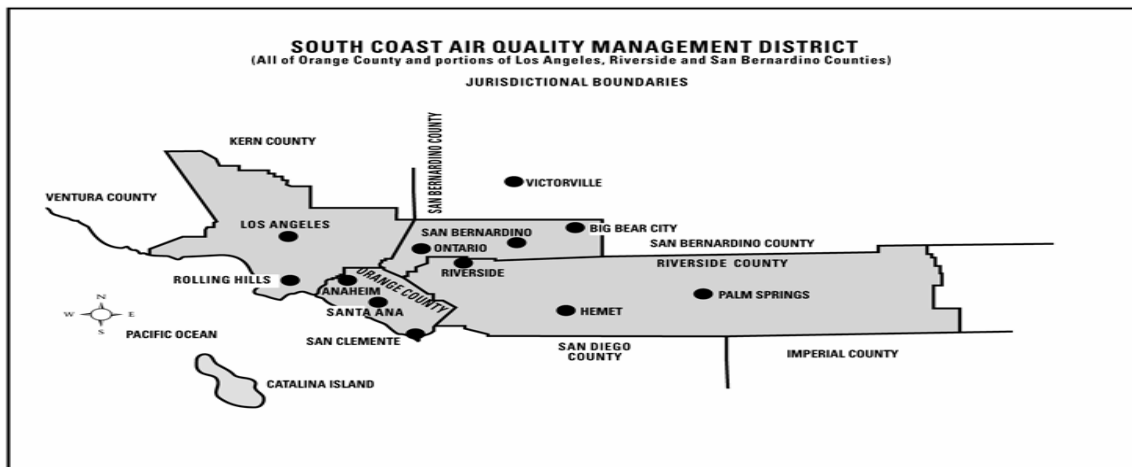
SUMMARY

Preface

This document represents the proposed FY 2014-2015 Draft Budget and Work Program of the South Coast Air Quality Management District (SCAQMD). The proposed budget is available for public review and comment during the month of April. Two workshops are scheduled to discuss the budget, one for the public on April 11, 2014 and one for the Governing Board on April 25, 2014. A final Draft Budget and Work Program, which may include changes based on input from the public and Board, will be presented for adoption at a public hearing on June 6, 2014.

Introduction

The South Coast Air Quality Management District (SCAQMD) began operation on February 1, 1977 as a regional governmental agency established by the California Legislature pursuant to the Lewis Air Quality Management Act. The SCAQMD encompasses all of Orange County and parts of Los Angeles, San Bernardino and Riverside Counties. It succeeded the Southern California Air Pollution Control District (APCD) and its predecessor four county APCDs, of which the Los Angeles County APCD was the oldest in the nation, having been formed in 1947. The SCAQMD Governing Board is composed of 13 members, including four members appointed by the Boards of Supervisors of the four counties in SCAQMD's jurisdiction, six members appointed by cities in the SCAQMD's jurisdiction and three members appointed by the Governor, the Speaker of the State Assembly and the Rules Committee of the State Senate, respectively. The members appointed by the Boards of Supervisors and cities consist of one member of the Board of Supervisors of Los Angeles, Orange, Riverside, and San Bernardino Counties, respectively, and a mayor or member of the city council of a city within Orange, Riverside, and San Bernardino Counties. Los Angeles County cities have three representatives, one each from the western and eastern portions and one member representing the City of Los Angeles.



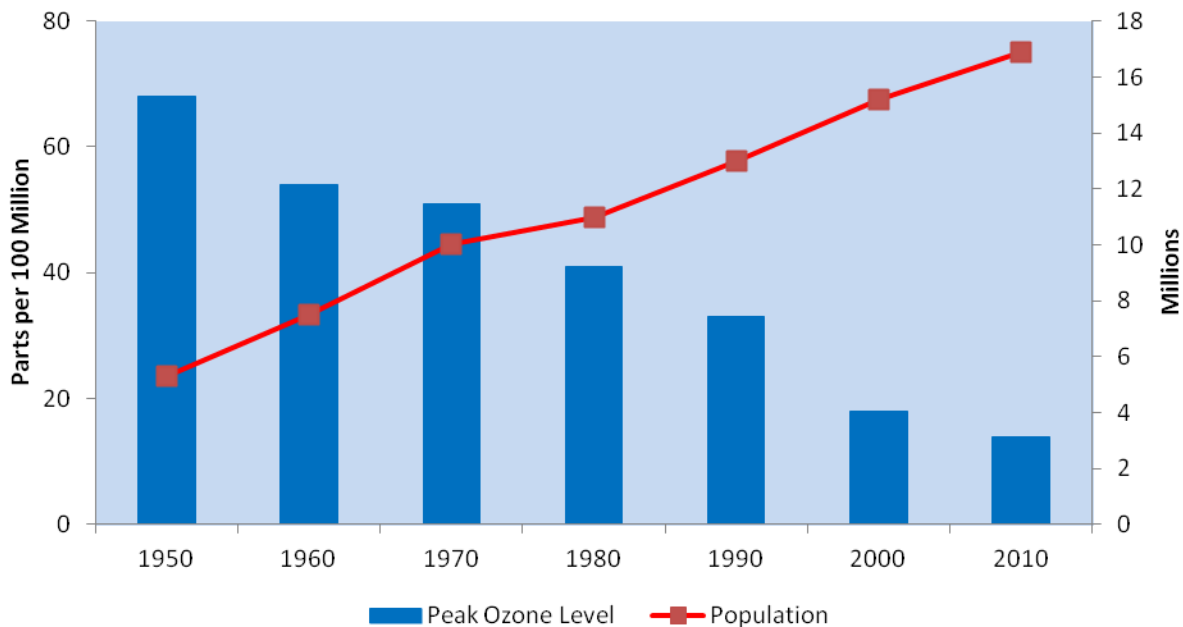
Air Quality History

The South Coast Air Basin has suffered unhealthy air since its rapid population growth and industrialization during World War II. While air quality has improved, the residents of the Basin still breathe some of the most polluted air in the nation.

The 66-year history of the region's air pollution control efforts is, in many ways, one of the world's key environmental success stories. Peak ozone levels have been cut by almost three-fourths since air monitoring began in the 1950s. Population exposure was cut in half during the 1980s alone.

Since the late 1940s when the war on smog began, the region's population has more than tripled from 4.8 million to over 16.4 million; the number of motor vehicles has increased over five-fold from 2.3 million to over 12.3 million; and the area has grown into one of the most prosperous regions of the world. This phenomenal economic growth illustrates that pollution control and strong economic growth can coincide.

60 Years of Progress in Reducing Ozone Levels



Mission

The SCAQMD believes all residents have a right to live and work in an environment of clean air and is committed to undertaking all necessary steps to protect public health from air pollution, with sensitivity to the impacts of its actions on the community and businesses. This mission is

pursued through a comprehensive program of planning, regulation, education, enforcement, compliance incentives, technical innovation and promoting public understanding of air quality issues. The SCAQMD has implemented a policy of working with regulated businesses to ensure their participation in making the rules which will impact them. This cooperative approach has resulted in greater business support for air that is more healthful to breathe.

To carry out its mission the SCAQMD develops a set of Goals and Priority Objectives which are evaluated and revised annually and presented at a public hearing. The following Goals have been established for FY 2014-15:

- I. Ensure expeditious progress toward meeting clean air standards and protecting public health.
- II. Enhance public education and ensure equitable treatment for all communities.
- III. Operate efficiently and in a manner sensitive to public agencies, businesses, the public and SCAQMD staff.

These goals are the foundation for the SCAQMD's Work Program. Each goal is supported by multiple activities, which target specific areas of program performance. A public hearing to receive input on the Goals and Priority Objectives for FY 2014-15 will be held on April 4, 2014.

Air Quality

Overview

The four-county Southern California region, designated for air quality purposes as the South Coast Air Basin, has some of the highest air pollution levels in the United States. The federal government has designated seven pollutants that are pervasive enough across the nation to warrant national health standards. Called "criteria pollutants," these are: ozone (O₃); nitrogen dioxide (NO₂); particulates (PM₁₀); fine particulates (PM_{2.5}); carbon monoxide (CO); lead (Pb); and sulfur dioxide (SO₂).

In addition, the State of California through the California Air Resources Board (CARB) sets ambient air quality standards for these same pollutants. California's standards are in some cases tighter than the federal Environmental Protection Agency's (EPA) standards, reflecting the conclusion on CARB's part that some of the federal standards are not adequate to protect public health in this region. Toxic compounds also are a potential problem. More toxic pollution is emitted into the air in the South Coast Basin than in any other region in California. The Basin's large number of vehicles and small sources—including small businesses and households using ozone-forming consumer products and paints—compounds the problem.

Air Quality Trends

Ozone levels have fallen by about three-quarters since peaks in the mid-1950s. Nitrogen dioxide, sulfur dioxide, and carbon monoxide levels have gone down from nonattainment to full

attainment of federal health standards. In November 2008, EPA revised the lead standard from a 1.5 $\mu\text{g}/\text{m}^3$ quarterly average to a 0.15 $\mu\text{g}/\text{m}^3$ rolling 3-month average and added new near-source monitoring requirements. The Los Angeles County portion of the Basin has since been designated non-attainment for lead due to monitored concentrations near one facility. However, the most recent preliminary 2013 data shows that the Basin meets the current lead standard. EPA revised the 8-hour ozone standard, effective May 2008, from concentrations exceeding 0.08 ppm to concentrations exceeding 0.075 ppm. In 2013, the current federal 8-hour ozone standard was exceeded on 94 days, the lowest number of exceedance days so far, based on preliminary 2013 data. The federal ozone standard was exceeded on 111 days in 2012 and 106 days in 2011. The maximum observed ozone levels show some year-to-year variability, but have generally been decreasing over the years. The highest 8-hour ozone level in the 2013 preliminary data was 0.112 ppm in 2013, compared to 0.112 ppm and 0.136 ppm in 2012 and 2011 respectively.

In 2007, EPA formally re-designated the Basin from nonattainment to full attainment of the federal health standard for carbon monoxide. Basin-wide maximum levels of carbon monoxide have been consistently measured at more than 30% below the federal standard since 2004. In 2010, EPA established a new NO_2 1-hour standard at a level of 100 ppb (0.100ppm) and SO_2 1-hour standard at a level of 75 ppb (0.075 ppm). In 2013, no sites exceeded the 1-hour NO_2 standard in the preliminary data.

In 2006, EPA rescinded the annual federal standard for PM_{10} but retained the 24-hour standard. Ambient levels of PM_{10} in the Basin meet the federal 24-hour PM_{10} standard. EPA has re-designated the Basin as attainment of the health based standard for PM_{10} . $\text{PM}_{2.5}$ levels have decreased dramatically in the Basin since the beginning of the decade; however, concentrations are still slightly above the federal annual and 24-hour standards at one monitoring station. While our air quality continues to improve, the South Coast Air Basin remains one of the most unhealthful areas in the nation in terms of air quality.

Mandates

The SCAQMD is governed and directed by several state laws and a comprehensive federal law which provide the regulatory framework for air quality management in this Basin. These laws require the SCAQMD to take prescribed steps to improve air quality.

Generally speaking, SCAQMD is responsible for stationary sources such as factories and businesses. The CARB is primarily responsible for motor vehicles. The SCAQMD and CARB share responsibilities with respect to area sources. The SCAQMD and Southern California Association of Governments (SCAG) share some responsibilities with CARB regarding some aspects of mobile source emissions. Control of emissions from sources such as airports, harbors, and trains is shared by the federal EPA, CARB and the SCAQMD.

Under state law, the SCAQMD must periodically develop and submit to the state an Air Quality Management Plan (AQMP) demonstrating how the region will achieve state and federal ambient air quality standards, or at a minimum demonstrate that all feasible measures are

being carried out to meet state air quality standards. Each iteration of the plan is an update of the previous plan. To date, the SCAQMD's Governing Board has adopted such plans demonstrating attainment in 1989, 1991, 1994, 1997, 1999 (amendments to plan adopted in 1997), 2003, 2007 and 2012. Earlier plans in 1979 and 1982 did not show attainment and predicted continued unhealthy air well into this century. The current 2012 AQMP demonstrates attainment of the federal 24-hour PM_{2.5} standard by 2014. Revisions to the federal annual PM_{2.5} standard, adopted by EPA to further protect public health, will extend the projected attainment of the new annual PM_{2.5} standard to the 2020-2025 timeframe. The revised 2008 federal 8-hour ozone standard is projected to extend attainment to 2032. Determination of the final attainment date will be part of the 2016 AQMP already under development.

State Laws include:

- California Clean Air Act (AB 2595) requires air districts in California to adopt plans to expeditiously meet state ambient air quality standards. It mandates that SCAQMD's attainment plans meet several specific requirements including:
 - ◆ a 5% per year reduction in emissions (the plan can achieve less than 5% annual reduction if it includes every feasible measure and an expeditious adoption schedule);
 - ◆ Best Available Control Technology (BACT) for new and modified sources;
 - ◆ Best Available Retrofit Control Technology (BARCT) for existing sources.
- Lewis-Presley Air Quality Management Act (SB 151) specifies additional, more stringent requirements for air quality plans in the South Coast area. It specifies that SCAQMD has responsibility to prepare the plan in conjunction with SCAG, which must prepare the portions of the plan relating to demographic projections, land use, and transportation programs.
- Air Toxics "Hot Spots" Information & Assessment Act (AB 2588) requires facilities that emit significant quantities of pollutants to prepare health risk assessments describing the impact of toxic contaminants on neighboring areas. If the SCAQMD determines that the toxic emissions create a significant risk, the public must be notified, and facilities must reduce emissions to below significant levels.
- Tanner Air Toxics Process (AB 1807) requires CARB to adopt air toxic control measures to limit emissions of toxic air contaminants from classes of industrial facilities. Local air districts are required to enforce these regulations or adopt equally stringent regulations of their own.

State law also includes the following measures:

- authorizes SCAQMD to adopt market incentives such as the emissions trading program known as RECLAIM as long as the emitters achieve reductions equivalent to command-and-control regulations;
- requires SCAQMD to establish a program to encourage voluntary participation in projects to increase the use of clean-burning fuels;

- requires SCAQMD to adopt and enforce rules to ensure no net emission increases from stationary sources.

Under the Federal Clean Air Act, the SCAQMD must develop and submit to CARB for review, followed by submittal to the EPA, an element of the State Implementation Plan (SIP) demonstrating how the region will achieve federal ambient air quality standards. In the case of ozone, the plan was required to be submitted by November 15, 1994 and for fine particulates, PM₁₀, the plan was required to be submitted by February 8, 1997. Plans for other pollutants were submitted in earlier years. In 1997, EPA adopted new ambient air quality standards for PM_{2.5} and replaced the 1-hour ozone standard with the new standard measured over an eight-hour period. Plans to attain these federal standards were submitted to EPA in November, 2007. The plan to attain the 24-hour PM_{2.5} standard by 2014 was submitted in early 2013. The Federal Clean Air Act mandates that sanctions be imposed on an area if a suitable plan is not adopted. These sanctions can include loss of key federal funds and more stringent requirements on new or expanding industries. Specific requirements for SCAQMD's AQMP include stringent requirements plus Lowest Achievable Emission Rate (LAER) and offsets for major new sources. Federal law also requires an operating permit program for major stationary sources, known as Title V, which must be supported by permit fees. Also, air toxics regulations adopted by EPA pursuant to Title III must be implemented by SCAQMD.

Air Quality Control

Developing solutions to the air quality problem involve highly technical processes and a variety of resources and efforts to meet the legal requirements of California and federal laws.

Monitoring: The first step is to determine the smog problem by measuring air pollution levels. SCAQMD operates 41 monitoring stations throughout its four-county jurisdiction. These range from full-service stations that measure all criteria pollutants, as well as some toxic pollutant levels, to those which measure specific pollutants in critical areas. These measurements provide the basis of our knowledge about the nature of the air pollution problem and for planning efforts to address the problem.

Pollution Sources: The SCAQMD, in cooperation with CARB and SCAG, estimates the sources of emissions causing the air pollution problem. Nature itself causes a small portion of the emissions and must be considered. In general, the SCAQMD estimates stationary and natural sources of emissions, SCAG develops the information necessary to estimate population and traffic, and CARB develops the information necessary to estimate mobile and area source emissions using the SCAG traffic data. This data is then pulled together in the AQMP for use in developing the necessary control strategies.

Air Quality Modeling: Using air quality, meteorological and emissions models, SCAQMD planners simulate air pollution to demonstrate attainment of the air quality standards and the impacts of sources to local and regional air quality. Due to the nature of air pollution, air quality models can be very complex. Some pollutants are not emitted directly into the air but

are products of photochemical reactions in the atmosphere. For example, VOCs mix with nitrogen dioxide (NO₂) and react in sunlight to form ozone; similarly, nitrogen oxide gases from tailpipes and smokestacks can be transformed into nitrates or particulates (PM_{2.5} and PM₁₀). The planners thus must take into account transport, land use characteristics and chemical reactions of emissions in the atmosphere to evaluate air quality impacts. Using model output, planners can look at different control scenarios to determine the best strategies to reduce air pollution for the lowest cost.

The considerable data required for these analyses is collected on an ongoing basis by SCAQMD staff. Modeling data is prepared and delivered using a geographic information system (GIS). GIS capability is used to prepare and produce data and spatial analysis maps for rulemaking, Environmental Impact Report (EIR) development and for other Offices within SCAQMD.

Planning: With emissions data and an air quality model in place, planners can develop possible control strategies and scenarios. The SCAQMD focuses most of its effort on stationary source controls. As mentioned earlier, for the most part, strategies to reduce driving are developed by SCAG, while mobile source control standards are developed by CARB.

Once a plan of emission controls to achieve federal standards is outlined, SCAQMD is required to hold multiple public meetings to present the proposed control strategies and receive public input. The SCAQMD also conducts a socioeconomic analysis of the strategies. The SCAQMD maintains an ongoing and independent advisory group of outside experts for both its air quality modeling and socioeconomic assessment methodologies.

To meet federal air quality standards, the 2007 AQMP called for significant reductions from projected baseline emissions (2015 for annual PM_{2.5} and 2024 for eight-hour ozone). These combined reductions, while meeting federal standards, will still not result in attainment of all California air quality standards since these are more stringent than federal standards. The 2012 AQMP addresses the 24-hour PM_{2.5} standard, demonstrating attainment by 2014 primarily through enhancements to existing episodic mandatory burn restrictions. The SCAQMD is working on improving the emissions inventory and modeling techniques to address the new federal annual PM_{2.5} and 8-hour ozone air quality standards for the next AQMP revision, the 2015 AQMP.

Rulemaking: The regulatory process, known as rulemaking, takes the concepts of control measures outlined in the AQMP and turns them into proposed rule language. This process involves the following: extensive research on technology; site inspections of affected industries to determine feasibility; typically a year or more of public task force and workshop meetings; in-depth analyses of environmental, social and economic impacts; and thorough review with appropriate Governing Board Committees.

This extensive process of public and policymaker participation encourages consensus in development of rule requirements so that affected sources have an opportunity for input into the rules which will regulate their operations. Once the requirements are developed, the proposed rule, along with an environmental impact report and a socioeconomic report, is

presented to SCAQMD's Governing Board at a public hearing. Public testimony is presented and considered by the Board before any rule is adopted. The adopted or amended rules are then submitted to CARB and EPA for their approval. It is not uncommon that rulemaking will include follow-up implementation studies. These studies may extend one or more years past rule adoption/amendment and prior to rule implementation. Such studies are typically submitted to the Governing Board or appropriate Governing Board Committees.

Enforcement and Education: The SCAQMD issues permits to construct and operate equipment to companies to ensure equipment is operated in compliance with adopted rules. Follow-up inspections are made to ensure that equipment is being operated under permit conditions.

Technical Innovation: In the late 1980s, SCAQMD recognized that technological innovation, as well as rule enforcement, would be necessary to achieve clean air standards. Thus the Technology Advancement Office was created to look for and encourage technical innovation to reduce emissions. The California State Legislature supported this effort by providing a \$1 surcharge on every DMV registration fee paid within the SCAQMD. These funds have been matched at a ratio of approximately three-to-one with funds from the private sector to develop new technologies such as low-emission vehicles, low-NO_x burners for boilers and water heaters, zero-pollution paints and solvents, fuel cells and other innovations.

An additional \$4 vehicle registration fee was authorized by the state legislature in 1990. These fees are administered through the SCAQMD with \$1.20 going to the SCAQMD for mobile source emissions reductions, \$1.60 subvended directly to cities and counties to support their air quality programs, and \$1.20 to the Mobile Source Reduction Review Committee (MSRC). The MSRC is an outside panel established by state law whose function is to make the decisions on the actual projects to be funded from that portion of the revenue.

Public Education: In the end, SCAQMD's efforts to clean up the air will be successful only to the extent that the public understands air quality issues and supports and participates in our cleanup effort. Thus, the SCAQMD strives to involve and inform the public through the Legislative and Public Affairs office, public meetings, publications, the press, and public service announcements.

Budget Synopsis

The SCAQMD's annual budget is adopted for the General Fund for a fiscal year that runs from July 1 through June 30 of the following year. The period covered by the FY 2014-15 budget is from July 1, 2014 to June 30, 2015. The General Fund budget is the agency's operating budget and is structured by Office and account. The accounts are categorized into three Major Objects: Salaries and Employee Benefits, Services and Supplies, and Capital Outlays. The budget is supplemented with a work program which estimates staff resources and expenditures along program and activity lines. A Work Program Output Justification is completed for each work

program which identifies performance goals, measureable outputs, legal mandates, activity changes and revenue categories.

The annual budget is adopted on a modified accrual basis. All annual expenditure appropriations lapse at fiscal year end to the extent that they have not been expended or encumbered. Budgeted revenues are projected to be collected during the fiscal year. Throughout the year, budget amendments may be necessary to accommodate additional revenue streams and expenditure needs. Any amendments due to budget increases or transfers between expenditure accounts in different Major Objects must be approved by SCAQMD's Governing Board. They are submitted to the Governing Board for approval at a monthly Board meeting in the format of a board letter which documents the need for the request and the source of the additional revenue or funding for the expenditure. Budget amendments resulting from transfers between expenditure accounts within the same Major Object are approved at the Office level.

SCAQMD does not adopt annual budgets for its Special Revenue Funds. Special Revenue Funds are used to record transactions applicable to specific revenue sources that are legally restricted for specific purposes. All transactions in Special Revenue Funds are approved by the Governing Board.

Budget Process

The SCAQMD budget process begins by establishing Goals and Priority Objectives for the fiscal year. The proposed annual budget and multi-year forecast is then developed by the Offices, Finance, Executive Council, and the Executive Officer based on the Goals and Priority Objectives as well as guidelines issued by the Executive Officer. Each Office submits requests for staffing, select Salary accounts, Services and Supplies accounts, and the Capital Outlays account. The remaining salary and benefit costs are developed by Finance. Capital expenditure requests are reviewed by an in-house committee who prioritizes the requests. Revenue projections are developed by Finance based on input received from the appropriate Offices and incorporating any proposed changes to the fee schedules. This information is integrated into an initial budget request, including a top-level multi-year forecast, and then fine-tuned under the direction of the Executive Officer to arrive at a proposed budget. The public, business community, and other stakeholders have several opportunities to participate in the budget process, up to and at the budget adoption hearing by the Governing Board, including:

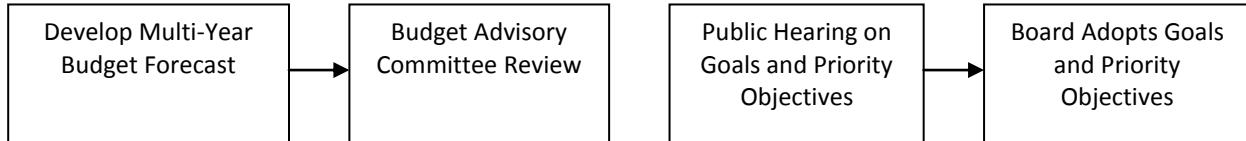
- two meetings of the Budget Advisory Committee whose members include various stakeholder representatives
- a public workshop to discuss proposed changes to the fee schedules and to discuss the proposed budget
- two public hearings, including one on the Goals and Priority Objectives and one on the proposed budget

The proposed budget is presented to SCAQMD's Governing Board at a budget workshop and to SCAQMD's Administrative Committee. Any public comment and Budget Advisory Committee

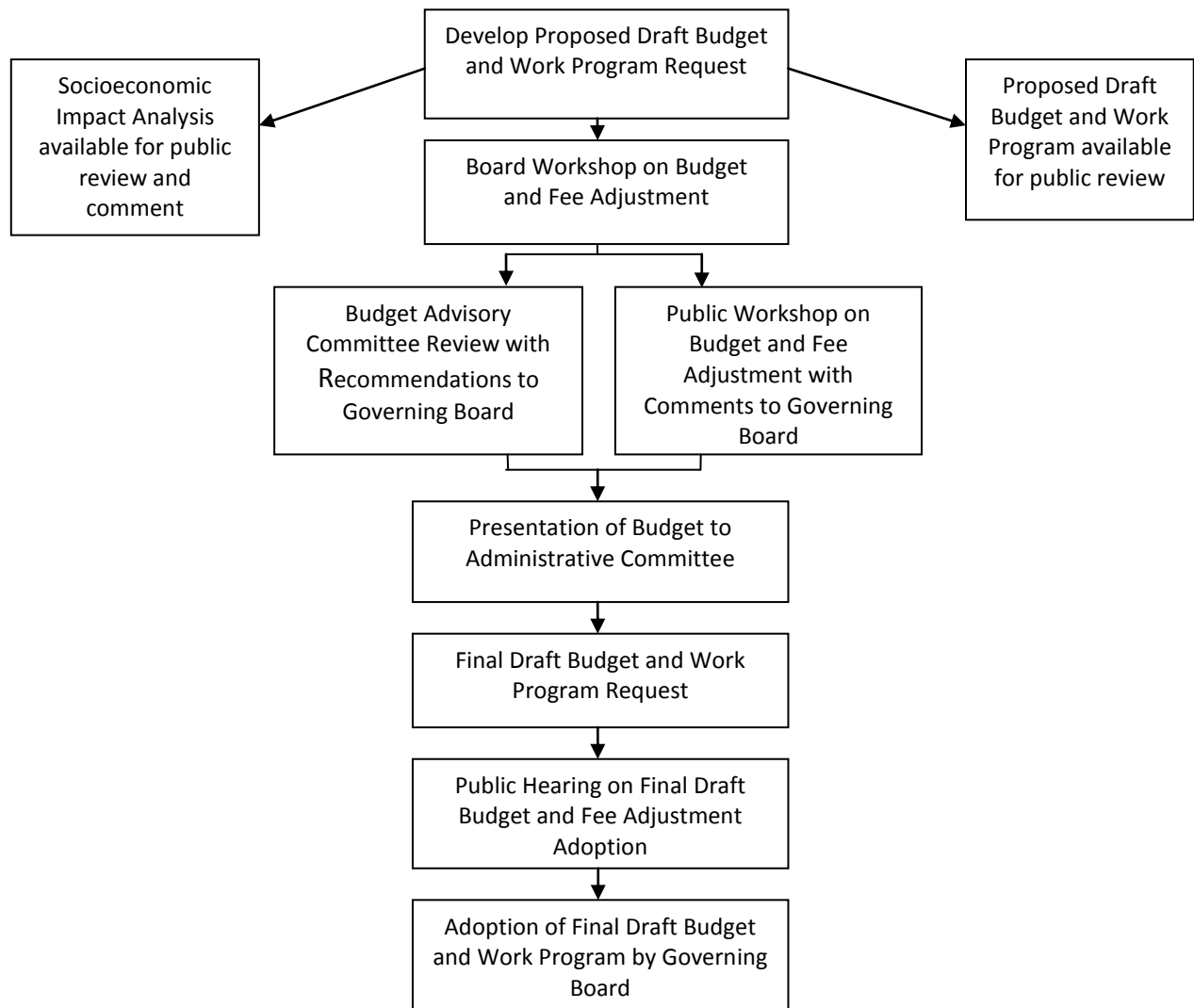
recommendations are also submitted to the Governing Board. The final proposed budget, including final fee schedules, is adopted by the Governing Board and is in place on July 1 for the start of the new fiscal year.

The following flow charts represent the major milestones and processes that take place in the development of the SCAQMD budget:

Preliminary Budget Process



Annual Budget Process



| Budget Timeline | |
|--|--------------|
| Budget packages distributed to Offices | Mid November |
| Budget submissions received from Offices | Mid January |
| Budget Advisory Committee meeting | Mid January |
| Proposed budget available for public review | April |
| Public Hearing on Goals & Priority Objectives | April |
| Budget Advisory Committee meeting on proposed budget | April |
| Public Workshop on proposed budget | April |
| Public comments and Budget Advisory Committee recommendations submitted to Governing Board | April |
| Governing Board budget workshop | April |
| Budget presented to Administrative Committee | May |
| Public Hearing & Governing Board adoption of budget | June |

Proposed Draft Budget & Work Program

Budget Overview

The proposed budget for FY 2014-15 is a balanced budget with expenditures and revenues of \$132.2 million. To compare against prior years, the following table shows SCAQMD amended budget and actual expenditures for FY 2012-13, adopted and amended budgets (as of March 2014) for FY 2013-14 and proposed budget for FY 2014-15.

| Description | FY 2012-13 Amended | FY 2012-13 Actual | FY 2013-14 Budget | FY 2013-14 Amended¹ | FY 2014-15 Budget |
|-----------------------------|---------------------------|--------------------------|--------------------------|---------------------------------------|--------------------------|
| Revenue/Transfers In | \$133.7 | \$135.2 | \$129.2 | \$134.2 | \$132.2 |
| Program Costs/Transfers Out | \$150.3 | \$144.1 | \$129.2 | \$134.2 | \$132.2 |

¹ Includes Board approved changes through March 2014

This budget reflects a decrease of approximately \$2 million in expenditures from the FY 2013-14 amended budget and a \$3 million increase in expenditures from the budget adopted for FY 2013-14. The increase in expenditures from the FY 2013-14 adopted budget can be attributed to increases in retirement, building operations, and infrastructure improvement costs. The FY 2014-15 proposed budget increases the funded staffing level by 1 position (from 797 to 798) from the FY 2013-14 adopted budget.

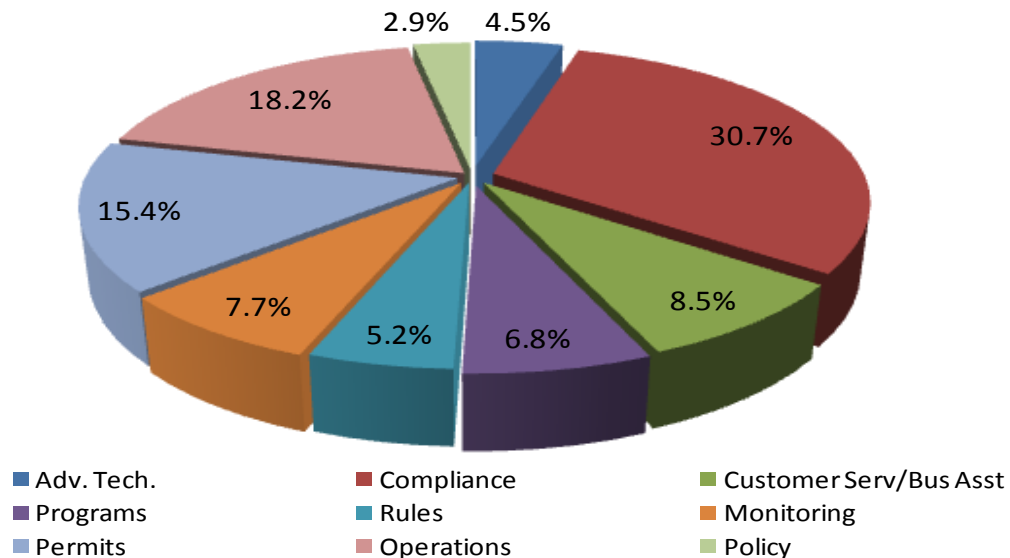
Expenditures

Work Program

SCAQMD expenditures are organized into nine Work Program Categories: Advance Clean Air Technology; Ensure Compliance with Clean Air Rules; Customer Service and Business Assistance; Develop Programs to Achieve Clean Air; Develop Rules to Achieve Clean Air; Monitoring Air Quality; Operational Support; Timely Review of Permits; and Policy Support. Each category consists of a number of Work Programs, or activities, which are classified according to the nature of the activity being performed.

Each Work Program corresponds to the Goals and Priority Objectives of the agency and identifies resources, performance measures/outputs and legal mandates. A complete description of each program category along with a detailed work program sort by program is included in the Work Program section. The pie chart that follows represents the budgeted expenditures by Program Category for FY 2014-15.

Work Program Category Expenditures



The following table compares SCAQMD Work Program expenditures by category for the FY 2013-14 adopted budget and FY 2014-15 proposed budget.

| Work Program Categories | FY 2013-14 Adopted Budget | FY 2014 -15 Proposed Budget |
|--|--------------------------------------|--|
| Advance Clean Air Technology | \$ 5,779,722 | \$ 5,943,279 |
| Ensure Compliance with Clean Air Rules | 38,125,605 | 40,595,094 |
| Customer Service and Business Assistance | 10,537,656 | 11,257,410 |
| Develop Programs to Achieve Clean Air | 9,845,401 | 9,001,281 |
| Develop Rules to Achieve Clean Air | 6,539,563 | 6,937,646 |
| Monitoring Air Quality | 11,197,603 | 10,159,755 |
| Operational Support | 23,237,586 | 24,127,044 |
| Timely Review of Permits | 19,923,476 | 20,331,852 |
| Policy Support | 4,016,316 | 3,866,713 |
| Total | \$ 129,202,928 | \$ 132,220,074 |

Account Categories

The following table compares the FY 2013-14 adopted budget to the proposed budget for FY 2014-15 by account category. The middle column is the FY 2013-14 amended budget that includes the Board-approved mid-year adjustments through March 2014.

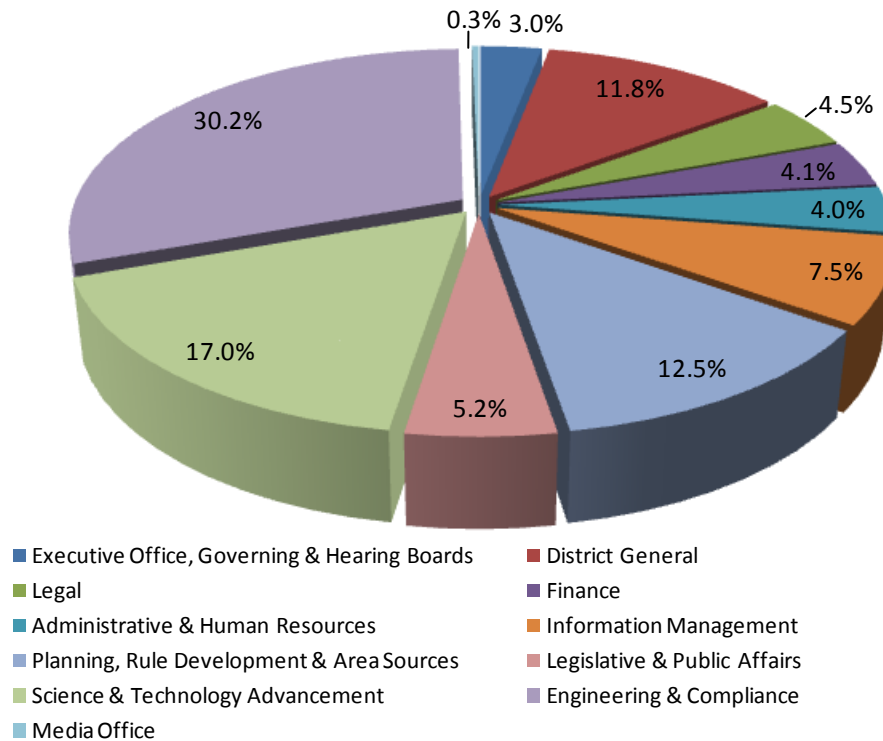
| Account Description | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2014-15 Proposed Budget |
|----------------------------|--------------------------------------|--------------------------------------|---------------------------------------|
| Salaries/Benefits | \$ 103,992,299 | \$ 103,654,844 | \$ 106,539,331 |
| Insurance | 1,097,400 | 1,121,249 | 1,317,400 |
| Rents | 424,780 | 666,506 | 431,234 |
| Supplies | 2,443,780 | 3,047,249 | 2,449,483 |
| Contracts and Services | 7,121,050 | 9,786,534 | 7,116,845 |
| Maintenance | 1,456,619 | 1,771,176 | 1,977,611 |
| Travel/Auto Expense | 696,502 | 891,039 | 693,502 |
| Utilities | 1,591,881 | 1,652,098 | 1,766,989 |
| Communications | 620,226 | 683,226 | 626,226 |
| Capital Outlay | 1,537,500 | 2,513,250 | 1,062,500 |
| Other | 1,004,850 | 1,166,,978 | 1,002,575 |
| Debt Service | 7,216,041 | 7,216,041 | 7,236,378 |
| Total | \$ 129,202,928 | \$ 134,153,937 | \$ 132,220,074 |

As mentioned previously, the proposed budget for FY 2014-15 represents an approximately \$2 million decrease in expenditures from the FY 2013-14 amended budget. The FY 2013-14 amended budget includes mid-year increases associated with the purchase of hydrogen sulfide analyzer systems, software development work, the MATES IV study, the purchase of a PM_{2.5} monitor, implementation costs for the Low Emissions Hearth Product Incentive Voucher Program as well as grant related expenditures offset by revenue.

Office Categories

The following pie chart represents budgeted expenditures by Office for FY 2014-15

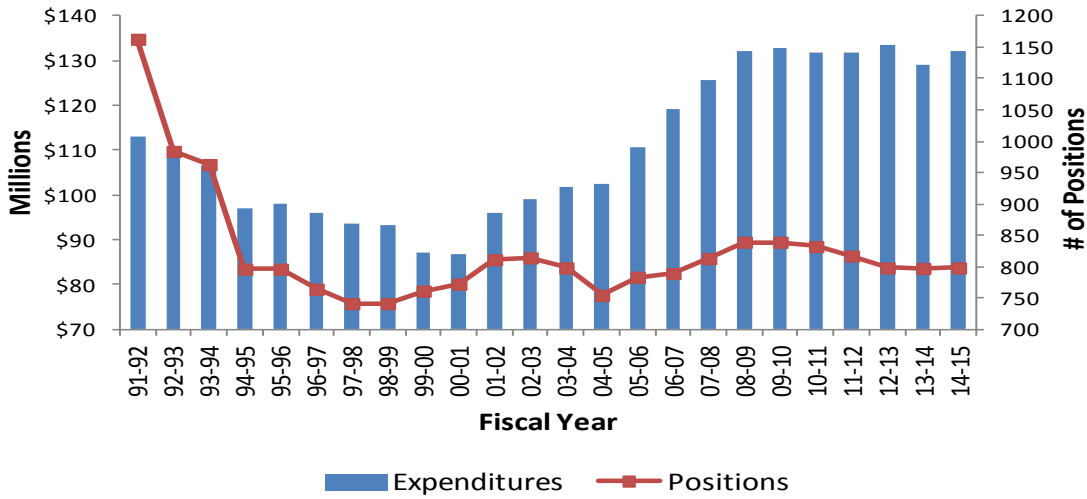
Expenditures by Office



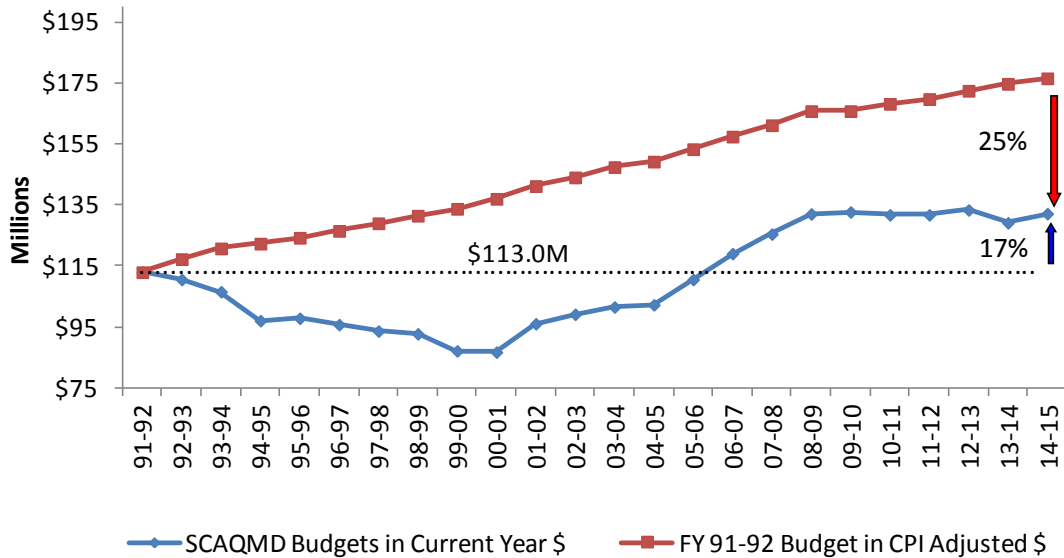
Budget Changes

Over the years, SCAQMD has focused on streamlining many of its operations while still meeting its program commitments, despite new federal and state mandates and increased workload complexity. The focus has been on reducing expenditures in the Major Object of Services and Supplies and maximizing the efficient use of staff resources to enable select vacant positions to remain vacant, be deleted or be unfunded. This effort has resulted in reduced program costs and is reflected in the following charts showing SCAQMD's staffing and budget levels starting in FY 1991-92 when staffing was at 1,163 FTEs. The proposed budget for FY 2014-15 reflects a staffing level of 798 FTEs. This level is 31% (365 FTEs) below the FY 1991-92 level. The FY 2014-15 proposed budget when compared to the FY 1991-92 adopted budget of \$113M is only 17% higher. After adjusting the FY 1991-92 adopted budget for CPI over the last 23 years, the FY 14-15 proposal is 25% lower.

Changes in Expenditure Budget



Inflation Impact on SCAQMD Budgets FY 1991-92 through FY 14-15

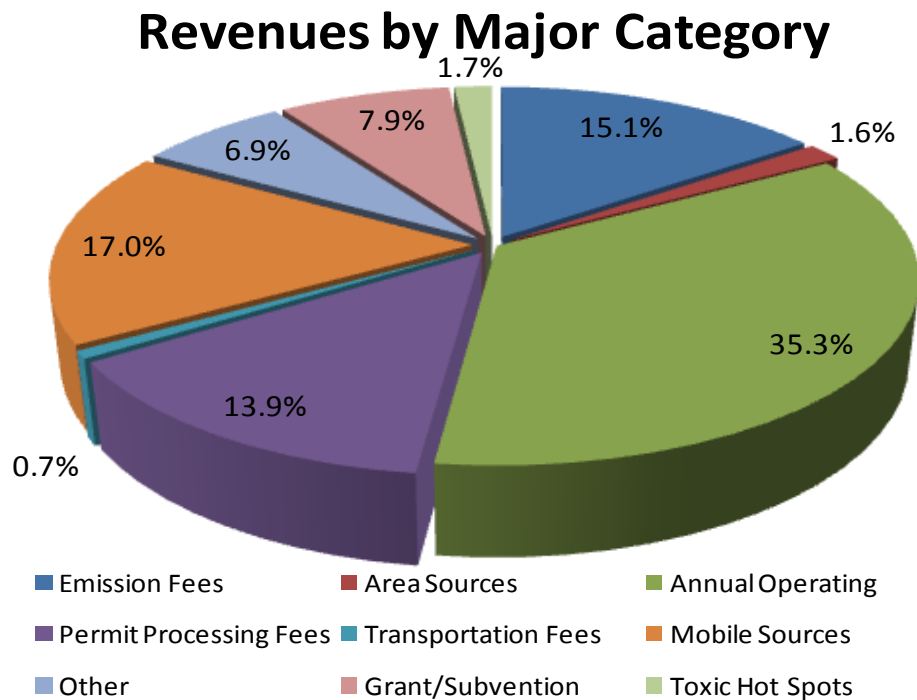


CPI adjustment based on California Consumer Price Index for preceding CY

Revenues

Revenue Categories

Each year, in order to meet its financial needs, the SCAQMD Governing Board adopts a budget supported by a system of annual operating and emission fees, processing fees, toxic “hot spots” fees, area sources fees, and transportation plan fees which are estimated to generate approximately \$90 million or about 68% of SCAQMD revenues. Other sources, which include penalties/settlements, interest, and miscellaneous income, generate approximately 7% of total revenues. The remaining 25% of revenue are projected to be received in the form of federal grants, California Air Resource Board (CARB) subvention, and California Clean Air Act motor vehicle fees. Beginning with its Fiscal Year 1978-79 Budget, the SCAQMD became a fee supported agency no longer receiving financial support from property taxes. The revenue budget includes a proposed CPI fee adjustment of 1.6% plus an additional fee adjustment of 3% in FY 2014-15 and an additional 3% in FY 2015-16 for Annual Operating Permit Renewal and Permit Processing Fees to better align program costs with revenues.



The following table compares the FY 2013-14 adopted revenues to the proposed revenues for FY 2014-15. The middle column is the adjusted revenues for FY 2013-14 that include Board-approved mid-year changes through March 2014.

| Revenue Description | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2014-15 Proposed Budget |
|---|--------------------------------------|--|---|
| Annual Operating Emission Fees | \$ 20,381,603 | \$ 20,381,603 | \$ 19,907,239 |
| Annual Operating Permit Renewal Fees | 43,077,692 | 43,077,692 | 45,519,161 |
| Permit Processing Fees | 18,199,082 | 18,199,082 | 18,340,435 |
| Portable Equip Registration Prgm | 745,780 | 745,780 | 1,184,169 |
| Area Sources | 2,040,720 | 2,040,720 | 2,133,600 |
| Grant/Subvention | 10,515,776 | 13,738,771 | 10,429,152 |
| Mobile Sources | 22,469,606 | 24,027,106 | 22,452,611 |
| Transportation Program | 954,037 | 954,037 | 894,080 |
| Toxic Hot Spots | 2,151,776 | 2,151,776 | 2,291,515 |
| Other ¹ | 8,666,856 | 8,837,370 | 9,068,112 |
| Total | \$ 129,202,928 | \$ 134,153,937 | \$ 132,220,074 |
| ¹ Includes revenues from Lease Income, Source Testing, Hearing Board, Penalties/Settlements, Interest, Subscriptions, Transfers In, and Other. | | | |

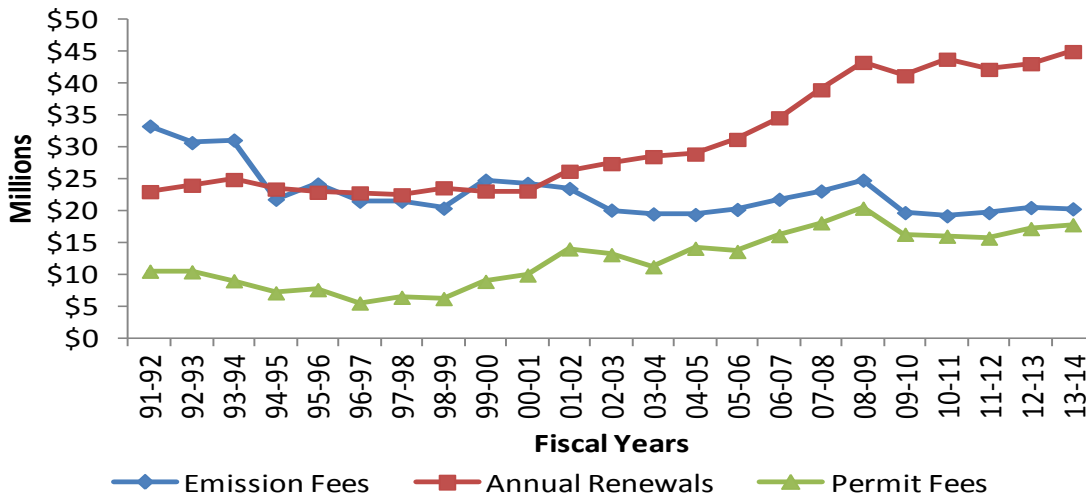
Over the past two decades, total permit fees (including permit processing, annual operating permit, and annual emissions based fees) collected from stationary sources has increased by about 24% from \$66.8 million in FY 1991-92 to \$83.1 million (estimated) in FY 2013-14. When adjusted for inflation however, stationary source revenues have decreased by 20% over this same period.

Mobile source revenues that are subvended to the SCAQMD by the Department of Motor Vehicles (DMV) are projected to stay flat from the FY 2013-14 budgeted amounts based on vehicle registration information from the DMV and recent revenue received. In addition, this category reflects incentive programs (Clean Fuels, Carl Moyer, and Prop 1B) whose contract activities and revenues are recorded in special revenue funds outside the General Fund. These incentive program costs are reimbursed to the General Fund from the various special revenue funds (subject to any administrative caps) and are reflected in the FY 2013-14 Amended Budget under the Mobile Source revenue category.

Revenues from the federal government, (Environmental Protection Agency, Department of Homeland Security, and Department of Energy) are projected to stay flat in FY 2014-15 from FY 2013-14 budgeted levels reflecting the anticipated amount of federal dollars from other one-

time and on-going grants in support of air quality efforts. State Subvention funding is expected to remain at the current level (reduced approximately 33% from FY 2001-02) for FY 2014-15. The following graph tracks actual stationary source revenues by type of fee from FY 1991-92 (when CPI limits were placed on SCAQMD fee authority) to estimated revenues for FY 2013-14.

Stationary Source Fees



Debt Structure

Pension Obligation Bonds

These bonds were issued jointly by the County of San Bernardino and the SCAQMD in December 1995. In June 2004 the SCAQMD went out separately and issued pension obligation bonds to refinance its respective obligation to the San Bernardino County Employee's Retirement Association for certain amounts arising as a result of retirement benefits accruing to members of the Association.

The annual payment requirements under these bonds are as follows:

| Year Ending June 30 | Principal | Interest | Total |
|---------------------|----------------------|----------------------|----------------------|
| 2015 | \$ 3,159,384 | \$ 4,031,994 | \$ 7,191,378 |
| 2016 | 3,235,598 | 3,954,554 | 7,190,152 |
| 2017-2018 | 6,763,808 | 7,620,198 | 14,384,006 |
| 2019-2023 | 18,867,074 | 14,029,476 | 32,896,550 |
| 2024 | 4,010,000 | 118,897 | 4,128,897 |
| Total | \$ 36,035,864 | \$ 29,755,119 | \$ 65,790,983 |

Fund Balance

The SCAQMD is projecting an Unreserved Undesignated Fund Balance for June 30, 2015 of \$23,103,647 in addition to the following Reserved and Unreserved Designated Fund Balances for FY 2014-15.

| Classification | Reserve/Unreserved Designation | Amount |
|--|--|---------------|
| Committed | Reserve for Encumbrances | \$ 6,947,000 |
| Nonspendable | Reserve for Inventory of Supplies | 80,000 |
| | Unreserved Designations: | |
| Assigned | For Enhanced Compliance Activities | 883,018 |
| Assigned | For Litigation/Enforcement | 1,600,000 |
| Assigned | For Other Post Employment Benefit (OPEB) Obligations | 2,952,496 |
| Assigned | For Permit Streamlining | 288,385 |
| Assigned | For Self-Insurance | 2,000,000 |
| Assigned | For Unemployment Claims | 80,000 |
| Total Reserves & Unreserved Designations | | \$ 14,830,899 |

Reserves represent portions of the fund balance set aside for future use and are therefore not available for appropriation. These reserves are made-up of encumbrances which represent the estimated amount of current and prior years' unperformed purchase orders and contract commitments at year-end; and inventory which represents the value at cost of office, computer, cleaning and laboratory supplies on hand at year-end.

Designations in the fund balance indicate plans for use of financial resources in future years. The SCAQMD is self-insured for general liability, workers' compensation, automobile liability, premises liability, and unemployment. The Designation for Litigation/Enforcement provides funding for outside legal support. The Designation for Permit Streamlining was established to fund program enhancements to increase permitting efficiency and customer service. The Designation for Enhanced Compliance Activities provides funding for inspection/compliance efforts. The Designation for Other Post Employment Benefit Obligations (OPEB) provides funding to cover the current actuarial valuation of the inherited OPEB obligation for long-term healthcare costs from the County of Los Angeles resulting from the consolidation of the four county Air Pollution Control Districts (APCDs).

Long-Term Projection

The SCAQMD continues to face a number of challenges in the upcoming years, including higher operating costs due to the market losses incurred by the retirement system and the need for major infrastructure improvement projects for an aging headquarters building, streamlining operations while meeting program commitments and uncertainties in the business environment as the economy overcomes the economic downturn of the past several years. A primary uncertainty is the degree of fluctuations the financial markets will take over the next few years which will determine the performance of our retirement investments and other investments. Another uncertainty is any legislative action that may impact the level of federal and state funding from grant awards and subvention funds. Cost recovery within the constraints of Prop 26 is a third uncertainty as SCAQMD strives to balance program operating expenses with revenues collected from fees.

In order to face these challenges, SCAQMD has a five year plan in place that provides for critical infrastructure improvement projects, maintains a stable vacancy rate in order to maximize cost efficiency, and sets the percentage of unreserved fund balance to revenue above the Governing Board mandate of 20%. In addition, the Governing Board approved a transfer of \$5 million from the General Fund Undesignated Fund Balance to the Debt Service Fund to provide funding for the debt service payments related to outstanding Pension Obligation Bonds over Fiscal Years 2015-16 through 2019-20.

The following chart, outlining SCAQMD’s financial projection over this time period, shows the agency’s commitment to meet these challenges and uncertainties while protecting the health of the residents within the SCAQMD boundaries and remaining sensitive to business.

| Fiscal 2013-14 Estimate and Five Year Projection | | | | | | |
|--|------------------------------|------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| (\$ in Millions) | | | | | | |
| | FY 13-14 Estimate | FY 14-15 Proposed | FY 15-16 Projected | FY 16-17 Projected | FY 17-18 Projected | FY 18-19 Projected |
| STAFFING | 797 | 798 | 797 | 797 | 797 | 797 |
| REVENUES* | \$136.2 | \$132.2 | \$133.7 | \$135.2 | \$135.4 | \$137.5 |
| EXPENDITURES/TRANSFERS OUT | \$137.2 | \$132.2 | \$133.7 | \$135.2 | \$135.4 | \$136.3 |
| Change in Fund Balance | (\$1.0) | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$1.2 |
| UNRESERVED FUND BALANCE (at year-end) | \$31.0 | \$31.0 | \$31.0 | \$31.0 | \$31.0 | \$32.2 |
| % of REVENUE | 23% | 23% | 23% | 23% | 23% | 23% |
| *Includes projected CPI fee increase of 1.6% for FY 2014-15, 2.1% for FY 2015-16, and 2.2% for FY 2016-17, FY 2017-18 and FY 2018-19. In FY 2014-15 & FY 2015-16 an additional 3% increase to Permit and Annual Operating revenue is being proposed. | | | | | | |

SUMMARY OF FISCAL YEAR 2014-15 DRAFT BUDGET

| | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget ¹ | FY 2013-14 Estimate ² | FY 2014-15 Proposed |
|----------------------------------|--|---|---|--------------------------------|
| Funding Sources | | | | |
| Revenue | \$129,202,928 | \$ 134,318,183 | \$ 136,192,085 | \$ 131,244,456 |
| Transfers-In* | 0 | 0 | 0 | 975,618 |
| Use of Designations | 0 | 0 | 0 | 0 |
| Use of Undesignated Fund Balance | 0 | 0 | 0 | 0 |
| Total Financing Sources | \$129,202,928 | \$ 134,318,183 | \$ 136,192,085 | \$ 132,220,074 |
| Funding Uses | | | | |
| Salaries & Employee Benefits | \$103,992,299 | \$ 103,654,844 | \$ 101,663,335 | \$ 106,539,331 |
| Services & Supplies | 23,673,129 | 27,985,843 | 26,030,548 | 24,618,243 |
| Capital Outlays | 1,537,500 | 2,513,250 | 2,496,567 | 1,062,500 |
| Transfers-Out | | | 2,055,000 | |
| Total Funding Uses | \$129,202,928 | \$ 134,153,937 | \$ 132,245,450 | \$ 132,220,074 |

*Effective in FY 2014-15, reimbursements to the General Fund from special revenue funds without a recurring source of revenue will be budgeted as "Transfers-in."

| Fund Balances -Reserves & Unreserved Designations | Classification | Projected June 30, 2014 | Projected June 30, 2015 |
|---|-----------------------|------------------------------------|------------------------------------|
| Reserve for Encumbrances | Committed | \$ 6,857,000 | \$ 6,947,000 |
| Reserve for Inventory of Supplies | Nonspendable | 80,000 | 80,000 |
| Designated for Budget Stabilization | Assigned | 1,481,502 | - |
| Designated for Enhanced Compliance Activities | Assigned | 883,018 | 883,018 |
| Designated for Facilities Refurbishing | Assigned | 578,289 | - |
| Designated for Litigation/Enforcement | Assigned | 1,600,000 | 1,600,000 |
| Designated for Other Post Employment Benefit (OPEB) Obligations | Assigned | 2,952,496 | 2,952,496 |
| Designated for Permit Streamlining | Assigned | 288,385 | 288,385 |
| Designated for Retirement Actuarial Increases | Assigned | 3,812,463 | - |
| Designated for Self-Insurance | Assigned | 2,000,000 | 2,000,000 |
| Designated for Unemployment Claims | Assigned | 80,000 | 80,000 |
| Total Reserves & Unreserved Designations | | \$ 20,613,153 | \$ 14,830,899 |
| Undesignated Fund Balance | Unassigned | \$ 22,231,393 | \$ 22,128,029 |
| Total Fund Balances | | \$ 42,844,546 | \$ 36,958,928 |

1. The FY 2013-14 Amended Budget includes mid-year changes through March 2014.

2. Includes estimated encumbrances of \$4,232,000 which will be applicable to the fiscal year ending June 30, 2014.

| ANALYSIS OF PROJECTED JUNE 30, 2014 FUND BALANCE | |
|---|----------------|
| Fund Balances as of June 30, 2013 | |
| Reserves | \$ 6,624,255 |
| Designated | 12,194,651 |
| Undesignated | 19,774,006 |
| Total Fund Balances, June 30, 2013: | \$ 38,592,912 |
| Add Excess Fiscal Year 2013-14 Revenues over Expenditures: | |
| Revenues | \$ 136,192,085 |
| Expenditures ¹ | 125,958,450 |
| Sub-Total: | \$ 10,233,634 |
| Deduct Decrease in Encumbrances Open on June 30, 2013: | (3,927,000) |
| Deduct Projected FY 2013-14 Transfers Out to Other Funds | (2,055,000) |
| Total Projected Fund Balances, June 30, 2014: | \$ 42,844,546 |
| Fund Balances (Projected) at June 30, 2014: | |
| Reserve for Encumbrances | \$ 6,857,000 |
| Reserve for Inventory of Supplies | 80,000 |
| Designated for Budget Stabilization | 1,481,502 |
| Designated for Enhanced Compliance Activities | 883,018 |
| Designated for Facilities Refurbishing | 578,289 |
| Designated for Litigation/Enforcement | 1,600,000 |
| Designated for Other Post Employment Benefit (OPEB) Obligations | 2,952,496 |
| Designated for Permit Streamlining | 288,385 |
| Designated for Retirement Actuarial Increases | 3,812,463 |
| Designated for Self-Insurance | 2,000,000 |
| Designated for Unemployment Claims | 80,000 |
| Undesignated | 22,231,393 |
| Total Projected Fund Balances, June 30, 2014 | \$ 42,844,546 |
| Note: This analysis summarizes the estimated amount of funds that will be carried into FY 2014-15. | |
| 1. Expenditures do not include estimated \$4,232,000 encumbrances for the Fiscal Year ended June 30, 2014 | |

| SCHEDULE OF AVAILABLE FINANCING AND PROPOSED FISCAL YEAR 2014-15 RESERVES AND DESIGNATIONS | | |
|---|----|----------------|
| Fund Balances | \$ | 42,844,546 |
| Emission Fees | | 19,907,239 |
| Annual Renewal Fees | | 45,519,161 |
| Permit Processing Fees | | 18,340,435 |
| Portable Equipment Registration Program | | 1,184,169 |
| State Subvention | | 3,900,000 |
| Federal Grant | | 6,529,152 |
| Interest Revenue | | 529,000 |
| Lease Revenue | | 140,895 |
| Source Test/Analysis Fees | | 741,680 |
| Hearing Board Fees | | 279,400 |
| Penalties and Settlements | | 5,000,000 |
| Area Sources | | 2,133,600 |
| Transportation Programs | | 894,080 |
| Mobile Sources/Clean Fuels | | 22,452,611 |
| Air Toxics "Hot Spots" | | 2,291,515 |
| Other Revenues/Transfers-In | | 2,377,136 |
| Total Funds | | \$ 175,064,621 |
| Less Proposed Fiscal Year 2014-15 Reserves and Designations: | | |
| Reserve for Encumbrances | \$ | 6,947,000 |
| Reserve for Inventory of Supplies | | 80,000 |
| Designated for Enhanced Compliance Activities | | 883,018 |
| Designated for Litigation/Enforcement | | 1,600,000 |
| Designated for Other Post Employment Benefit (OPEB) Obligations | | 2,952,496 |
| Designated for Permit Streamlining | | 288,385 |
| Designated for Self-Insurance | | 2,000,000 |
| Designated for Unemployment Claims | | 80,000 |
| Total Proposed Reserves and Designations: | | \$ 14,830,899 |
| Available Financing: | | \$ 160,233,722 |

| ANALYSIS OF PROJECTED JUNE 30, 2015 FUND BALANCE | |
|---|----------------|
| Fund Balances as of June 30, 2014 | |
| Reserves | \$ 6,937,000 |
| Designated | 13,676,153 |
| Undesignated | 22,231,393 |
| Total Fund Balances, June 30, 2014: | \$ 42,844,546 |
| Excess Fiscal Year 2014-15 Revenues over Expenditures: | |
| Revenues/Transfers-In | \$ 131,244,456 |
| Expenditures ¹ | (128,020,074) |
| Sub-Total: | \$ 3,224,382 |
| Decrease in Encumbrances Open on July 1, 2014: | (4,110,000) |
| Transfer Undesignated Fund Balance to the Debt Service Fund on July 1, 2014 | (5,000,000) |
| Total Projected Fund Balances, June 30, 2015: | \$ 36,958,928 |
| Fund Balances (Projected) Fiscal Year 2014-15: | |
| Reserve for Encumbrances | \$ 6,947,000 |
| Reserve for Inventory of Supplies | 80,000 |
| Designated for Enhanced Compliance Activities | 883,018 |
| Designated for Litigation/Enforcement | 1,600,000 |
| Designated for Other Post Employment Benefit (OPEB) Obligations | 2,952,496 |
| Designated for Permit Streamlining | 288,385 |
| Designated for Self-Insurance | 2,000,000 |
| Designated for Unemployment Claims | 80,000 |
| Undesignated | 22,128,029 |
| Total Projected Fund Balances, June 30, 2015 | \$ 36,958,928 |
| 1. Expenditures do not include estimated \$4,200,000 encumbrances for the Fiscal Year ended June 30, 2015 | |

| Revenue Comparison | | | | |
|---|------------------------|----------------------|------------------------|------------------------|
| Revenue Account | FY 2012-13 Actual * | FY 2013-14 Budget | FY 2013-14 Estimate | FY 2014-15 Proposed |
| Emission Fees | \$ 20,540,391 | \$ 20,381,603 | \$ 20,318,598 | \$ 19,907,239 |
| Annual renewal Fees | 41,935,475 | 43,077,692 | 43,757,979 | 45,519,161 |
| Permit Processing Fees | 17,210,640 | 18,199,082 | 17,780,987 | 18,340,435 |
| Portable Equipment Registration Program | 1,120,745 | 745,780 | 1,281,711 | 1,184,169 |
| State Subvention | 3,948,646 | 3,900,000 | 3,949,439 | 3,900,000 |
| State Grant | 3,210,130 | - | - | - |
| Federal Grant | 7,694,890 | 6,615,776 | 8,117,410 | 6,529,152 |
| Interest Revenue | 343,206 | 529,000 | 482,000 | 529,000 |
| Lease Revenue | 140,739 | 140,152 | 122,717 | 140,895 |
| Source Test/Analysis Fees | 790,824 | 709,150 | 605,745 | 741,680 |
| Hearing Board Fees | 277,544 | 217,337 | 336,213 | 279,400 |
| Penalties and Settlements | 11,562,529 | 5,000,000 | 9,159,579 | 5,000,000 |
| Area Sources | 2,132,263 | 2,040,720 | 2,040,720 | 2,133,600 |
| Transportation Programs | 927,824 | 954,037 | 1,043,496 | 894,080 |
| Mobile Sources/Clean Fuels | 19,397,116 | 22,469,606 | 22,469,606 | 22,452,611 |
| Air Toxics "Hot Spots" | 1,431,740 | 2,151,776 | 2,151,776 | 2,291,515 |
| Other Revenues/Transfers-In | 2,484,868 | 2,071,217 | 2,574,109 | 2,377,136 |
| Total Revenue | \$ 135,149,569 | \$ 129,202,928 | \$ 136,192,085 | \$ 132,220,074 |

EXPLANATION OF REVENUE SOURCES

Annual Operating Emissions Fees

This program was initiated in January 1978. All permitted facilities pay a flat fee for up to four tons of emissions. In addition to the flat fee, facilities that emit four tons or greater (from both permitted and unpermitted equipment) of any organic gases, specific organics, nitrogen oxides, sulfur oxides, or particulate matter, or 100 tons per year or greater of carbon monoxide, also pay fees based on the facility's total emissions. These facilities pay for emissions from permitted equipment as well as emissions from unpermitted equipment and processes which are regulated, but for which permits are not required, such as solvent use. In addition, a fee-per-pound is assessed on the following toxic air contaminants and ozone depleters: ammonia; asbestos; benzene; cadmium; carbon tetrachloride; chlorinated dioxins and dibenzofurans; ethylene dibromide; ethylene dichloride; ethylene oxide; formaldehyde; hexavalent chromium; methylene chloride; nickel; perchloroethylene; 1,3-butadiene; inorganic arsenic; beryllium; polynuclear aromatic hydrocarbons (PAHs); vinyl chloride; lead; 1,4-dioxane; trichloroethylene; chlorofluorocarbons (CFCs); and 1,1,1-trichloroethane.

Along with annual operating permit renewal fees, emissions fees are intended to recover the costs of SCAQMD's compliance, planning, rule making, monitoring, testing, source education, public outreach, civil enforcement, and stationary and area source research projects. Historically, compliance-related costs for permitted sources are assigned to annual operating permit renewal fees, while planning and rulemaking are assigned to annual operating emissions-based fees.

FY 2014-15 Proposed Budget: The non-RECLAIM emissions is based on Annual Emission Report (AER) data for Calendar Year 2012. The RECLAIM NO_x and So_x emission projection is based on holdings according to the RECLAIM Trading Credit (RTC) listing. The flat emission fees are projected based on the number of active facilities with at least one permit. A 1.6% CPI increase is included.

Annual Operating Permit Renewal

The Lewis-Presley Clean Air Act requires the SCAQMD to have an annual permit renewal program. The SCAQMD initiated this program in February 1977. This program requires that all active permits be renewed on an annual basis upon payment of annual renewal fees. The annual renewal rates are established in SCAQMD Rule 301 and are based on the type of equipment, which is related to the complexity of related compliance activity. For basic equipment (not control equipment), the operating fee schedule also corresponds to some extent to the emission potential of the equipment. Along with annual operating emissions fees, annual operating permit renewal fees are intended to recover the costs of programs such as SCAQMD's compliance program, planning, rule making, monitoring, testing, source education, public outreach, civil enforcement, and stationary and area source research projects. Historically, compliance-related costs for permitted sources are assigned to annual operating permit renewal fees, while planning and rulemaking are assigned to annual operating emissions-based fees.

FY 2014-15 Proposed Budget: The projection is based on an estimated number of permits at the various equipment fee schedules. A 1.6% CPI increase is included as well as an additional 3% fee increase to more fully recover costs.

Permit Processing Fees

Permits are the primary vehicles the SCAQMD uses to ensure that equipment in SCAQMD's jurisdictional boundaries are in compliance with SCAQMD Rules and Regulations. Permit processing fees support the permit processing program and the fee rate schedule for the different equipment categories are based on the average time it takes to process and issue a permit. Each applicant, at the time of filing, pays a permit processing fee which partially recovers the costs for normal evaluation of the application and issuance of the permit to construct and permit modifications. This

EXPLANATION OF REVENUE SOURCES

revenue category also includes fees charged to partially recover the costs of evaluation of plans, including but not limited to Rule 403 dust control plans, Rule 1118 flare monitoring plans, and Rule 1113 architectural coating plans. The permit processing fees also cover the administrative cost to process Change of Operator applications, applications for Emission Reduction Credits, and Administrative Changes to permits.

FY 2014-15 Proposed Budget: The projection is based on the anticipated number and type of applications that will be processed. A 1.6% CPI increase is included as well as an additional 3% fee increase to more fully recover costs.

Portable Equipment Registration Program (PERP)

The California Air Resources Board (CARB) provides revenues to local air districts to offset the costs of inspecting equipment registered under CARB's Portable Equipment Registration Program (PERP). Fees for inspection of PERP-registered engines by SCAQMD field staff are collected by CARB at the time of registration and passed through to SCAQMD on an annual basis. Fees for inspection of all other PERP-registered equipment are billed at an hourly rate set forth in SCAQMD Rule 301, but determined by CARB and collected by SCAQMD at the time the inspection is conducted.

FY 2014-15 Proposed Budget: The revenue projection is based on the anticipated number of inspections.

Area Sources

Emissions fees from architectural coatings revenue covers architectural coatings fair share of emissions supported programs. Quantity-based fees on architectural coatings are also assessed. Rule 314 covers emission-based fees and quantity-based fees. Beginning in FY 2008-09, annual assessments of architectural coatings, based on quantity (gallons) distributed or sold for use in SCAQMD's jurisdiction, are included in revenue projections; this revenue allows SCAQMD to recover the costs of staff working on compliance, laboratory support, architectural coatings emissions data, rule development, and architectural coatings revenue collection.

FY 2014-15 Proposed Budget: Emissions have remained relatively flat even though the sales volume is starting to recover. A 1.6% CPI increase is included.

California Air Resources Board Subvention

The State appropriates monies each year to subvene to local air quality districts to support an active air quality program. The CARB subvention monies are not limited to specific programs, but are available for the general support of air quality-related programs.

FY 2014-15 Proposed Budget: In FY 2002-03 the State reduced SCAQMD's subvention to \$4 million, a cut of approximately \$2 million from the FY 2001-02 level. The current amount of \$3.9 million is included in FY 2014-15.

Federal Grants/Other Federal Revenue

SCAQMD receives funding EPA Section 103 and 105 grants to help support the SCAQMD in its administration of active air quality control and monitoring programs where the SCAQMD is required to perform specific agreed-upon activities. Other EPA and Department of Energy (DOE) grants provide funding for various air pollution reduction projects. A Department of Homeland Security (DHS) grant funds a special particulate monitoring program. When stipulated in the grant agreement, the General Fund is reimbursed for administrative costs associated with grant-funded projects. Most

EXPLANATION OF REVENUE SOURCES

federal grants are limited to specific purposes but EPA Section 105 grants are available for the general support of air quality-related programs.

FY 2014-15 Proposed Budget: The revenue projection is based on funding levels from current federal grants.

Interest

Revenue from this source is the result of investing the SCAQMD's cash balances. However, interest attributable to special revenue funds, such as the Clean Fuels Program Fund, remains with those funds.

FY 2014-15 Proposed Budget: A projected rate of return of 0.56 percent is included in the proposed budget.

Leases

Revenue in this category is a result of leasing a portion of SCAQMD's Headquarters facility.

FY 2014-15 Proposed Budget: The projection is based on the terms of any negotiated lease payments SCAQMD expects to receive.

Source Test/Sample Analysis Fees

Revenue in this category includes fees for source tests, test protocol and report reviews, continuous emissions monitoring systems (CEMS) evaluations and certifications, laboratory approval program (LAP) evaluations, and laboratory sample analyses. The revenue recovers a portion of the costs of performing tests, technical evaluations, and laboratory analyses.

FY 2014-15 Proposed Budget: A 1.6% CPI increase is included.

Hearing Board

The revenue from this source results from filing of petitions for variances and appeals, excess emissions fees, and daily appearance fees. The revenue recovers a portion of the costs associated with these activities. Petitions for Orders for Abatement are filed by the District; therefore, there are no Hearing Board fees/revenue related to Order for Abatement proceedings before the Hearing Board. Thirty percent (30%) of Hearing Board cases for FY 2012-13 were Orders for Abatement.

FY 2014-15 Proposed Budget: This estimate is based on the number of hearings held/cases heard. A 1.6% CPI increase is included.

Penalties/Settlements

The revenue from this source is derived from cash settlements for violations of permit conditions, SCAQMD Rules, or state law. This revenue source is available for the general support of the SCAQMD's programs.

FY 2014-15 Proposed Budget: It is anticipated that revenue in this category will be approximately \$5.0 million.

EXPLANATION OF REVENUE SOURCES

Mobile Sources

Mobile Sources revenue is composed of five components: AB2766 revenue and administrative/program cost reimbursements from the Carl Moyer, Proposition 1B, and MSRC programs.

AB2766:

Section 9250.17 of the Vehicle Code gives the Department of Motor Vehicles (DMV) authority to collect and forward to the SCAQMD four dollars for every vehicle registered in SCAQMD's jurisdictional boundaries. Thirty percent of the money (\$1.20 per vehicle) collected is recognized in SCAQMD's General Fund as mobile sources revenue and is used for programs to reduce air pollution from motor vehicles and to carry out related planning, monitoring, enforcement, and technical studies authorized by, or necessary to implement, the California Clean Air Act of 1988 or the Air Quality Management Plan. A proportionate share of programs that are not associated with any individual type of source (e.g. air quality monitoring) is supported by these revenues.

The remaining monies are used to pay for projects to reduce air pollution from mobile vehicles: 40% (\$1.60 per vehicle) to the Air Quality Improvement Fund to be passed through to local governments and 30% (\$1.20 per vehicle) to the Mobile Sources Air Pollution Reduction Fund (MSRC) to pay for projects recommended by the MSRC and approved by the Governing Board.

Carl Moyer Program:

The Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer Program) provides funding from the state of California for the incremental cost of cleaner heavy-duty vehicles, off-road vehicles and equipment, marine, and locomotive engines. The General Fund receives reimbursements from the Carl Moyer Fund for staff time and other program implementation/administration costs.

Proposition 1B:

The Proposition 1B Program is a \$1 billion bond program approved by California voters in November 2006. This incentive program is designed to reduce diesel emissions and public health risks from goods movement activities along California's trade corridors. The General Fund receives reimbursements from the Proposition 1B Funds for staff time and other program implementation/administration costs.

MSRC:

Revenue posted to the General Fund reflects the reimbursement from the Mobile Source Air Pollution Reduction Fund for the cost of staff support provided to the MSRC in administering a mobile source program. These administrative costs are limited by State law and the MSRC adopts a budget for staff support each year.

FY 2014-15 Proposed Budget: Revenue projections are based on vehicle registration data from the DMV, recent revenue received, and anticipated reimbursable staff costs to implement the Carl Moyer Prop 1B, and MSRC programs.

Clean Fuels

Section 9250.11 of the Vehicle Code gives the DMV authority to collect and forward to SCAQMD money for clean fuels technology advancement programs and transportation control measures related to stationary sources, according to the plan approved pursuant to Health & Safety Code section 40448.5. One dollar is collected by the DMV for every vehicle registered in SCAQMD's jurisdictional boundaries, forwarded to SCAQMD, and deposited in a revenue account in the Clean Fuels Program Fund.

EXPLANATION OF REVENUE SOURCES

Clean fuels fees from stationary sources are recorded in a separate revenue account within the Clean Fuels Program Fund. Fees are collected from sources that emit 250 tons or more per year of Nitrogen Oxides (NO_x), Sulfur Oxides (SO_x), Reactive Organic Compounds (ROC), or Particulate Matter (PM). The fees collected are used to develop and implement activities that promote the use of clean-burning fuels. These activities include assessing the cost effectiveness of emission reductions associated with clean fuels development and use of new clean fuels technologies, and other clean fuels related projects.

FY 2014-15 Proposed Budget: The General Fund receives reimbursements from the Clean Fuels Program Fund for staff time and other program implementation/administration costs necessary to implement the Clean Fuels Program.

Transportation Programs

In accordance with federal and state Clean Air Act requirements, SCAQMD's Rule 2202 provides employers with a menu of options to reduce mobile source emissions generated from employee commutes or alternatively, implement mobile source emission reduction programs. The options are to offset mobile source emissions generated from the employee commutes, and options to meet a worksite-specific emission reduction target for the subsequent year. Employers with 250 or more employees at a worksite are subject to Rule 2202 and are required to submit an annual registration. The revenue from this category is used to recover a portion of the costs associated with filing, processing, reviewing, and auditing the registrations.

FY 2014-15 Proposed Budget: The projection is based on the anticipated number of registrations. A 1.6% CPI increase is included.

Toxic "Hot Spots"

Health and Safety Code Section 44380 requires the SCAQMD to assess and collect fees from facilities that emit toxic compounds. Fees collected are used to recover state and SCAQMD costs to collect and analyze data regarding air toxics and their effect on the public. Costs recovered include a portion of the administrative, outreach, plan processing, and enforcement costs to implement this program.

FY 2014-15 Proposed Budget: The revenue projection is based on estimated General Fund reimbursements from the Air Toxics Fund for staff time and other program and administrative expenditures.

Other

Miscellaneous revenue includes revenue attributable to professional services the SCAQMD renders to other agencies, reimbursements from special revenue funds (non-mobile source), vanpool revenue, fees from fitness center memberships, Public Records Act requests, and staff serving as witnesses.

FY 2014-15 Proposed Budget: The revenue projections are based on historical trend information.

| SCAQMD | | | | | | |
|---|---|---------------------------------|---------------------------------|---------------------------|------------------------|----------------|
| Line Item Expenditure | | | | | | |
| Major Object / Account # / Account Description | FY 2012-13 Actuals * | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2013-14 Estimate ** | FY 2014-15 Proposed | |
| Salary & Employee Benefits | | | | | | |
| 51000-52000 | Salaries | \$ 69,407,933 | \$ 69,380,911 | \$ 69,043,456 | \$ 68,117,561 | \$ 70,157,184 |
| 53000-55000 | Employee Benefits | 32,881,955 | 34,611,388 | 34,611,388 | 33,545,773 | 36,382,147 |
| Sub-total Salary & Employee Benefits | | \$ 102,289,888 | \$ 103,992,299 | \$ 103,654,844 | \$ 101,663,335 | \$ 106,539,331 |
| Services & Supplies | | | | | | |
| 67250 | Insurance | \$ 1,146,926 | \$ 1,097,400 | \$ 1,121,249 | \$ 1,121,249 | \$ 1,317,400 |
| 67300 | Rents & Leases Equipment | 344,233 | 137,880 | 353,106 | 274,695 | 143,628 |
| 67350 | Rents & Leases Structure | 301,420 | 286,900 | 313,400 | 296,999 | 287,606 |
| 67400 | Household | 443,098 | 712,287 | 707,287 | 488,452 | 712,287 |
| 67450 | Professional & Special Services | 7,021,432 | 4,989,193 | 7,296,516 | 6,576,354 | 5,059,793 |
| 67460 | Temporary Agency Services | 1,035,266 | 946,920 | 1,282,320 | 1,243,739 | 898,235 |
| 67500 | Public Notice & Advertising | 229,115 | 426,100 | 420,100 | 367,948 | 394,100 |
| 67550 | Demurrage | 71,555 | 46,550 | 80,308 | 69,112 | 52,430 |
| 67600 | Maintenance of Equipment | 816,858 | 524,140 | 735,197 | 634,040 | 520,132 |
| 67650 | Building Maintenance | 566,306 | 932,479 | 1,035,979 | 927,517 | 1,457,479 |
| 67700 | Auto Mileage | 161,459 | 65,142 | 161,179 | 151,490 | 63,142 |
| 67750 | Auto Service | 294,314 | 312,047 | 314,047 | 295,054 | 312,047 |
| 67800 | Travel | 298,087 | 319,313 | 415,813 | 306,267 | 318,313 |
| 67850 | Utilities | 1,405,249 | 1,591,881 | 1,652,098 | 1,652,098 | 1,766,989 |
| 67900 | Communications | 580,569 | 620,226 | 683,226 | 688,015 | 626,226 |
| 67950 | Interest Expense | 2,872,971 | 4,094,658 | 4,094,658 | 4,094,658 | 4,076,994 |
| 68000 | Clothing | 25,963 | 30,550 | 33,804 | 26,852 | 27,550 |
| 68050 | Laboratory Supplies | 519,077 | 275,000 | 554,682 | 526,403 | 275,000 |
| 68060 | Postage | 275,352 | 407,387 | 431,037 | 330,150 | 409,387 |
| 68100 | Office Expense | 1,512,068 | 1,070,826 | 1,157,946 | 1,115,104 | 1,079,779 |
| 68200 | Office Furniture | 56,502 | 59,000 | 78,679 | 71,179 | 56,500 |
| 68250 | Subscriptions & Books | 124,929 | 163,757 | 166,257 | 144,735 | 164,107 |
| 68300 | Small Tools, Instruments, Equipment | 96,465 | 65,160 | 236,494 | 170,591 | 65,160 |
| 68350 | Film | - | 100 | 100 | - | - |
| 68400 | Gas and Oil | 286,385 | 372,000 | 372,000 | 316,676 | 372,000 |
| 69500 | Training/Conference/Tuition/ Board Exp. | 644,542 | 658,292 | 683,592 | 640,160 | 655,492 |
| 69550 | Memberships | 178,591 | 73,725 | 162,425 | 135,114 | 70,960 |
| 69600 | Taxes | 30,632 | 49,000 | 70,628 | 42,669 | 49,000 |
| 69650 | Awards | 97,663 | 79,723 | 79,723 | 74,527 | 77,023 |
| 69700 | Miscellaneous Expenses | 129,606 | 144,110 | 170,610 | 127,317 | 150,100 |
| 69750 | Prior Year Expense | (76,014) | - | - | - | - |
| 69800 | Uncollectable Accounts Receivable | 454,094 | - | - | - | - |
| 89100 | Principal Repayment | 7,347,007 | 3,121,383 | 3,121,383 | 3,121,383 | 3,159,384 |
| Sub-total Services & Supplies | | \$ 29,291,720 | \$ 23,673,129 | \$ 27,985,843 | \$ 26,030,548 | \$ 24,618,243 |
| 77000 | Capital Outlays | \$ 3,034,824 | \$ 1,537,500 | \$ 2,513,250 | \$ 2,496,567 | \$ 1,062,500 |
| 79050 | Building Remodeling | \$ - | \$ - | \$ - | \$ - | \$ - |
| Total Expenditures | | \$ 134,616,433 | \$ 129,202,928 | \$ 134,153,937 | \$ 130,190,450 | \$ 132,220,074 |
| * Does not include Transfers Out. | | | | | | |
| ** Estimates based on July 2013 through March 2014 actual expenditures and budget amendments. | | | | | | |

SALARIES & EMPLOYEE BENEFITS

| Acct. # | Account Description | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2013-14 Estimate | FY 2014-15 Proposed Budget | Increase/ (Decrease) ^(a) |
|--|--------------------------|---------------------------|---------------------------|----------------------|----------------------------|-------------------------------------|
| 51000-52000 | Salaries | \$69,380,911 | \$69,043,456 | \$ 68,117,561 | \$70,157,184 | \$925,895 |
| <p>These accounts include Salaries and special pays such as: Call-Back, Hazard, Night Shift, Rideshare, Skilled Based, Stand By and Overtime. The FY 2014-15 Request proposes to maintain vacant positions at 8%. In FY 2013-14 vacant positions were budgeted 9% and are projected to end the fiscal year at 10%. The FY 2014-15 Proposed Budget does not include overtime amounts for federal grant work that is not awarded until mid-year. An expenditure appropriation will occur mid-year when the grants are awarded.</p> | | | | | | |
| 53000 | Employee Benefits | \$2,859,144 | \$2,859,142 | \$2,681,750 | \$2,724,527 | (\$134,617) |
| <p>This account includes the costs associated with state disability insurance and the employer's share of unemployment insurance, Social Security and Medicare. In addition, this account includes manager's individual memberships and/or management physicals.</p> | | | | | | |
| 54000 | Retirement | \$21,254,518 | \$21,254,520 | \$ 20,692,836 | \$22,904,535 | \$1,650,017 |
| <p>This account includes employer's share of the employee retirement system contributions. The increase from the FY 2013-14 Adopted Budget is based on the contribution rates provided from the San Bernardino County Retirement Association (SBCERA).</p> | | | | | | |
| 55000 | Insurance | \$10,497,726 | \$10,497,726 | \$ 10,171,188 | \$10,753,085 | \$255,359 |
| <p>This account includes employer's share of health, life, dental, vision care, and accident insurance.</p> | | | | | | |

SCAQMD Personnel Summary – Authorized/Funded Positions

| Positions as of July 1, 2013 | Mid-Year Adjustments | | Positions as of June 30, 2014 | FY 2014-15 Request | | Positions as of June 30, 2015 |
|------------------------------|----------------------|--------|-------------------------------|--------------------|--------|-------------------------------|
| | Add | Delete | | Add | Delete | |
| 797 | 0 | 0 | 797 | 3 | 2 | 798 |

Fiscal Year 2014-15 Requested Personnel Actions

| Office | Position | Add | Delete | Total |
|----------------------------------|--------------------------------------|----------|------------|----------|
| Finance | Supervising Payroll Technician | 1 | | 1 |
| Science & Technology Advancement | Senior Public Information Specialist | 1 | | 1 |
| Science & Technology Advancement | Administrative Secretary | 1 | | 1 |
| Science & Technology Advancement | Senior Administrative Secretary | | (1) | (1) |
| Science & Technology Advancement | Secretary | | (1) | (1) |
| Total | | 3 | (2) | 1 |

^(a)FY 2014-15 Proposed Budget vs. FY 2013-14 Adopted Budget.

SERVICES & SUPPLIES

| Acct. # | Account Description | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2013-14 Estimate | FY 2014-15 Proposed Budget | Increase/ (Decrease) ^(a) |
|--|------------------------------------|---------------------------------|---------------------------------|------------------------|----------------------------------|--|
| 67250 | INSURANCE | \$ 1,097,400 | \$ 1,121,249 | \$ 1,121,249 | \$ 1,317,400 | \$ 220,000 |
| <p>This account is for insurance coverage for the following: commercial property (real and personal) with earthquake and flood coverage, boiler and machinery, public official liability, excess workers' compensation and excess general liability. The SCAQMD is self-insured for workers' compensation, general liability, and automobile liability. The amount requested reflects anticipated workers' compensation claims, insurance policy premiums, property losses above SCAQMD's insurance deductibles, and liability claim payments.</p> | | | | | | |
| 67300 | RENTS & LEASES EQUIPMENT | \$ 137,880 | \$ 353,106 | \$ 274,695 | \$ 143,628 | \$ 5,748 |
| <p>This account is for lease agreements and/or rental of office equipment such as communication devices for emergency response inspectors, laboratory and atmospheric measurement equipment for special projects, audio visual equipment for outside meetings, printing equipment and photocopiers. The increase from the FY 2013-14 Adopted Budget reflects anticipated needs.</p> | | | | | | |
| 67350 | RENTS & LEASES STRUCTURE | \$ 286,900 | \$ 313,400 | \$ 296,999 | \$ 287,606 | \$ 706 |
| <p>This account is for expenditures associated with structures and lot leases, and off-site storage rentals: Long Beach/Sacramento field offices - \$122,706; Conference and meeting rooms - \$14,000; and Air monitoring sites/Wind Station Leases - \$150,900 Free and low-cost public facilities are used whenever possible for public workshops and informational meetings. The increase from the FY 2013-14 Adopted Budget reflects anticipated needs. The FY 2014-15 Proposed Budget does not include amounts for federally funded grant programs. An expenditure appropriation will occur mid-year when the grants are awarded.</p> | | | | | | |
| 67400 | HOUSEHOLD | \$ 712,287 | \$ 707,287 | \$ 488,452 | \$ 712,287 | \$ 0 |
| <p>This account is used for trash disposal, landscape maintenance, parking lot maintenance, janitorial supplies, and janitorial contracts. This account is also used for expenses associated with the Diamond Bar facility, such as specialized cleaning supplies and services required in the computer room.</p> | | | | | | |
| 67450 | PROFESSIONAL & SPECIAL SERVICES | \$ 4,989,193 | \$ 7,296,516 | \$ 6,576,354 | \$ 5,059,793 | \$ 70,600 |
| <p>This account is for services rendered to the SCAQMD by other agencies and consultants. The FY 2014-15 Professional & Special Services supporting detail is located at the end of this section. The FY 2014-15 Proposed Budget does not include amounts for federally funded grant programs. An expenditure appropriation will occur mid-year when the grants are awarded.</p> | | | | | | |

^(a)FY 2014-15 Proposed Budget vs. FY 2013-14 Adopted Budget.

SERVICES & SUPPLIES

| Acct. # | Account Description | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2013-14 Estimate | FY 2014-15 Proposed Budget | Increase/ (Decrease) ^(a) |
|--|-----------------------------|---------------------------------|---------------------------------|------------------------|----------------------------------|--|
| 67460 | TEMPORARY AGENCY SERVICES | \$ 946,920 | \$ 1,282,320 | \$ 1,243,739 | \$ 898,235 | \$ (48,685) |
| <p>Funds budgeted in this account are used for specialized temporary services that supplement staff in support of SCAQMD programs. Amounts are budgeted as a contingency for long-term absences and retirements/resignations. Also, budgeted in this account is the student internship program that provides college students with the opportunity to gain experience in the workplace. The decrease from the FY 2013-14 Adopted Budget reflects anticipated needs. The FY 2014-15 Proposed Budget does not include amounts for federally funded grant programs. An expenditure appropriation will occur mid-year when the grants are awarded.</p> | | | | | | |
| 67500 | PUBLIC NOTICE & ADVERTISING | \$ 426,100 | \$ 420,100 | \$ 367,948 | \$ 394,100 | \$ (32,000) |
| <p>This account is used for legally required publications such as Requests for Proposals, Requests for Quotations, personnel recruitment, outreach, and advertisement of SCAQMD Governing Board and Hearing Board meetings, and public notification of SCAQMD rulemaking activities. The decrease from the FY 2013-14 Adopted Budget reflects anticipated needs.</p> | | | | | | |
| 67550 | DEMURRAGE | \$ 46,550 | \$ 80,308 | \$ 69,112 | \$ 52,430 | \$ 5,880 |
| <p>This account is for various freight and cylinder charges as well as workspace reconfigurations and personnel moves. The FY 2014-15 Proposed Budget reflects anticipated needs but does not include amounts for federally funded grant programs. An expenditure appropriation will occur mid-year when the grants are awarded.</p> | | | | | | |
| 67600 | MAINTENANCE OF EQUIPMENT | \$ 524,140 | \$ 735,197 | \$ 634,040 | \$ 520,132 | \$ (4,008) |
| <p>This account is for maintenance costs of SCAQMD equipment. Amounts are budgeted for the following: mainframe computer hardware, phone switch, air monitoring equipment, print shop equipment, copiers, and audio visual equipment. The FY 2014-15 Proposed Budget reflects anticipated needs but does not include amounts for federally funded grant programs. An expenditure appropriation will occur mid-year when the grants are awarded.</p> | | | | | | |
| 67650 | BUILDING MAINTENANCE | \$ 932,479 | \$ 1,035,979 | \$ 927,517 | \$1,457,479 | \$ 525,000 |
| <p>This account reflects expenditures for maintaining SCAQMD offices and air monitoring stations. Also included are the following: a contingency amount for unplanned repairs; Gateway Association Dues; elevator maintenance; energy management and compressor services; and carpet replacement. The increase from the FY 2013-14 Adopted Budget is due to the carpet replacement. The FY 2014-15 Proposed Budget does not include amounts for federally funded grant programs. An expenditure appropriation will occur mid-year when the grants are awarded.</p> | | | | | | |

^(a)FY 2014-15 Proposed Budget vs. FY 2013-14 Adopted Budget.

SERVICES & SUPPLIES

| Acct. # | Account Description | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2013-14 Estimate | FY 2014-15 Proposed Budget | Increase/ (Decrease) ^(a) |
|--|-------------------------|---------------------------------|---------------------------------|------------------------|----------------------------------|--|
| 67700 | AUTO MILEAGE | \$ 65,142 | \$ 161,179 | \$ 151,490 | \$ 63,142 | \$ (2,000) |
| <p>This account is used to reimburse employees for the cost of using personal vehicles while on SCAQMD business. The requests include the mileage incurred for staff that are required to work on their scheduled days off and for employees who use their personal car on SCAQMD-related business, conferences, and seminars. Mileage reimbursement for the Legislative and Public Affairs staff to attend various community, business and intergovernmental events is also included. The FY 2014-15 Proposed Budget reflects anticipated needs but does not include amounts for federally funded grant programs. An expenditure appropriation will occur mid-year when the grants are awarded.</p> | | | | | | |
| 67750 | AUTO SERVICE | \$ 312,047 | \$ 314,047 | \$ 295,054 | \$ 312,047 | \$ 0 |
| <p>This account is used for the maintenance, towing, and repair of SCAQMD fleet vehicles. The FY 2014-15 Proposed Request reflects anticipated needs to maintain fleet vehicles.</p> | | | | | | |
| 67800 | TRAVEL | \$ 319,313 | \$ 415,813 | \$ 306,267 | \$ 318,313 | \$ (1,000) |
| <p>This account is for business travel, including lodging and meals paid pursuant to the Administrative Code, for participation in legislative hearings and meetings involving state, federal, and inter-agency issues that affect air quality in the South Coast Air Basin. The FY 2014-15 Proposed Budget reflects anticipated needs but does not include amounts for federally funded grant programs. An expenditure appropriation will occur mid-year when the grants are awarded.</p> | | | | | | |
| 67850 | UTILITIES | \$ 1,591,881 | \$ 1,652,098 | \$ 1,652,098 | \$1,766,989 | \$ 175,108 |
| <p>This account is used to pay utility costs at the SCAQMD's headquarters building, the South Bay field office, and air monitoring stations. The increase from the FY 2013-14 Adopted Budget reflects anticipated rate increases in gas, water, and electricity costs for these sites along with an increase in the number of air monitoring sites.</p> | | | | | | |
| 67900 | COMMUNICATIONS | \$ 620,226 | \$ 683,226 | \$ 688,015 | \$ 626,226 | \$ 6,000 |
| <p>This account includes telephone and fax service, leased computer lines, video conferencing, wireless internet access for inspectors in the field, radio, and microwave services. The increase from the FY 2013-14 Adopted Budget reflects the anticipated level of expenditures for FY 2014-15. The FY 2014-15 Proposed Budget does not include amounts for federally funded grant programs. An expenditure appropriation will occur mid-year when the grants are awarded.</p> | | | | | | |
| 67950 | INTEREST EXPENSE | \$ 4,094,658 | \$ 4,094,658 | \$ 4,094,658 | \$4,076,994 | \$ (17,664) |
| <p>This account is for the interest due on the 1995 and 2004 Pension Obligation Bonds. The FY 2014-15 Proposed Budget reflects scheduled payments for the fiscal year.</p> | | | | | | |

^(a)FY 2014-15 Proposed Budget vs. FY 2013-14 Adopted Budget.

SERVICES & SUPPLIES

| Acct. # | Account Description | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2013-14 Estimate | FY 2014-15 Proposed Budget | Increase/ (Decrease) ^(a) |
|--|--|---------------------------------|---------------------------------|------------------------|----------------------------------|--|
| 68000 | CLOTHING | \$ 30,550 | \$ 33,804 | \$ 26,852 | \$ 27,550 | \$ (3,000) |
| <p>This account is for the purchase of safety equipment and protective clothing used by source testing, laboratory, compliance, and stockroom personnel. The decrease from the FY 2013-14 Adopted Budget reflects the anticipated level of expenditures for FY 2014-15.</p> | | | | | | |
| 68050 | LABORATORY SUPPLIES | \$ 275,000 | \$ 554,682 | \$ 526,403 | \$ 275,000 | \$ 0 |
| <p>This account is used to purchase various laboratory supplies such as chemicals, calibration gases and glassware for laboratory services. The FY 2014-15 Proposed Budget reflects anticipated needs but does not include amounts for federally funded grant programs. An expenditure appropriation will occur mid-year when the grants are awarded.</p> | | | | | | |
| 68060 | POSTAGE | \$ 407,387 | \$ 431,037 | \$ 330,150 | \$ 409,387 | \$ 2,000 |
| <p>This account covers the cost of SCAQMD mailings such as annual billings, permits, notifications to the Governing Board and Advisory groups, monthly newsletters, warrants, outreach materials to local governments, and Rule 2202 notifications. The FY 2014-15 Proposed Budget reflects anticipated needs.</p> | | | | | | |
| 68100 | OFFICE EXPENSE | \$ 1,070,826 | \$ 1,157,946 | \$ 1,115,104 | \$ 1,079,779 | \$ 8,953 |
| <p>This account is used for the purchase of office supplies, computer hardware and software under \$5,000, photocopier supplies, print shop and artist supplies, stationery and forms. The FY 2014-15 Proposed Budget reflects anticipated needs but does not include amounts for federally funded grant programs. An expenditure appropriation will occur mid-year when the grants are awarded.</p> | | | | | | |
| 68200 | OFFICE FURNITURE | \$ 59,000 | \$ 78,679 | \$ 71,179 | \$ 56,500 | \$ (2,500) |
| <p>This account is for office furniture under \$5,000. The decrease from the FY 2013-14 Adopted Budget reflects anticipated needs.</p> | | | | | | |
| 68250 | SUBSCRIPTION & BOOKS | \$ 163,757 | \$ 166,257 | \$ 144,735 | \$ 164,107 | \$ 350 |
| <p>This account is used to purchase reference materials, magazine subscriptions, books, and on-line database legal research services. The FY 2014-15 Proposed Budget reflects anticipated needs.</p> | | | | | | |
| 68300 | SMALL TOOLS, INSTRUMENTS, EQUIPMENT | \$ 65,160 | \$ 236,494 | \$ 170,591 | \$ 65,160 | \$ 0 |
| <p>This account covers the purchase of small tools and equipment utilized at the air monitoring stations, the laboratory, and in the maintenance of the headquarters building. The FY 2014-15 Proposed Budget does not include amounts for federally funded grant programs. An expenditure appropriation will occur mid-year when the grants are awarded.</p> | | | | | | |

^(a)FY 2014-15 Proposed Budget vs. FY 2013-14 Adopted Budget.

SERVICES & SUPPLIES

| Acct. # | Account Description | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2013-14 Estimate | FY 2014-15 Proposed Budget | Increase/ (Decrease) ^(a) |
|--|---|---------------------------------|---------------------------------|------------------------|----------------------------------|--|
| 68350 | FILM | \$ 100 | \$ 100 | \$ - | \$ - | \$ (100) |
| <p>This account covers the purchase of film for use in rule compliance court cases, the laboratory for microscopy, and by other organizational units for publications and presentations. As of FY 2014-15, this account is no longer used.</p> | | | | | | |
| 68400 | GAS & OIL | \$ 372,000 | \$ 372,000 | \$ 316,676 | \$ 372,000 | \$ - |
| <p>This account is for the purchase of gasoline, oil, and alternative fuels for the SCAQMD fleet. The FY 2014-15 Proposed Budget reflects anticipated needs.</p> | | | | | | |
| 69500 | TRAINING/CONF/ TUITION/BOARD EXP | \$ 658,292 | \$ 683,592 | \$ 640,160 | \$ 655,492 | \$ (2,800) |
| <p>This account is used for tuition reimbursement, registration, training, certain costs associated with the SCAQMD's Governing and Hearing Boards and SCAQMD advisory groups, training-related travel expenditures, and per diems for SCAQMD advisory groups. The FY 2014-15 Proposed Budget reflects anticipated needs.</p> | | | | | | |
| 69550 | MEMBERSHIPS | \$ 73,725 | \$ 162,425 | \$ 135,114 | \$ 70,960 | \$ (2,765) |
| <p>This account provides for SCAQMD membership in various organizations such as: Merchants and Manufacturers Association; California Air Pollution Control Officers Association; Air and Waste Management Association; Western Region Item Bank; Inland Empire Economic Council; the Black, Latino, and Asian Business Associations; and several Chambers of Commerce. Also budgeted are the continued memberships in scientific, clean fuels, advanced technology, and related environmental business/policy organizations, such as ASTM (American Society for Testing and Materials), California Environmental Business Council, and the California Hydrogen Business Council. The decrease from the FY 2013-14 Adopted Budget reflects anticipated needs.</p> | | | | | | |
| 69600 | TAXES | \$ 49,000 | \$ 70,628 | \$ 42,669 | \$ 49,000 | \$ 0 |
| <p>This account is for unsecured property and use taxes, fuel taxes, and sales taxes. The FY 13-14 Amended Budget included a one-time tax for a fuel cell at the Diamond Bar Headquarters. The FY 2014-15 Proposed Budget reflects anticipated needs.</p> | | | | | | |
| 69650 | AWARDS | \$ 79,723 | \$ 79,723 | \$ 74,527 | \$ 77,023 | \$ (2,700) |
| <p>This account includes for employee service awards for continuous service, employee recognition programs, plaques/awards the SCAQMD may present to individuals/businesses/ community groups for outstanding contributions towards air quality goals, and promotional awards for community events. The FY 2014-15 Proposed Budget reflects anticipated needs.</p> | | | | | | |

^(a)FY 2014-15 Proposed Budget vs. FY 2013-14 Adopted Budget.

SERVICES & SUPPLIES

| | Account Description | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2013-14 Estimate | FY 2014-15 Proposed Budget | Increase/ (Decrease) ^(a) |
|---|--|---------------------------------|---------------------------------|------------------------|----------------------------------|--|
| 69700 | MISCELLANEOUS EXPENSES | \$ 144,110 | \$ 170,610 | \$ 127,317 | \$ 150,100 | \$ 5,990 |
| This account is to record expenditures that cannot be classified in another account. The increase from the FY 2013-14 Adopted Budget reflects the anticipated miscellaneous expenses for FY 2014-15 | | | | | | |
| 69750 | PRIOR YEAR EXPENSE | \$ - | \$ - | \$ - | \$ - | \$ - |
| This account is used to record expenditures attributable to prior year budgets. No amount is budgeted for this account due to the nature of the account. | | | | | | |
| 69800 | UNCOLLECTIBLE ACCOUNTS RECEIVABLE | \$ - | \$ - | \$ - | \$ - | \$ - |
| No amount is budgeted for this account due to the nature of the account. | | | | | | |
| 89100 | PRINCIPAL REPAYMENT | \$ 3,121,383 | \$ 3,121,383 | \$ 3,121,383 | \$ 3,159,384 | \$ 38,001 |
| This account is for the principal due on pension obligation bonds. The FY 2014-15 Proposed Budget reflects scheduled principal payments. | | | | | | |

^(a)FY 2014-15 Proposed Budget vs. FY 2013-14 Adopted Budget.

SERVICES & SUPPLIES

| Proposed Fiscal Year 2014-15 Professional & Special Services Detail by Office | | | |
|---|-----------------------------------|---|--------------------|
| Office | Program | Contract Description | Amount |
| District General | Dist. General Overhead | Administrative Fees for 1995 & 2004 Pension Obligation Bonds (POBs) | \$1,500 |
| | Dist. General Overhead | Arbitration/Hearing Officer | 9,400 |
| | Dist. General Overhead | Benefits Administrator | 13,000 |
| | Dist. General Overhead | Commercial Real Estate Broker | 95,000 |
| | Dist. General Overhead | Employee Assistance Program | 13,995 |
| | Dist. General Overhead | Employee Relations Litigation | 250,000 |
| | Dist. General Overhead | Custodial Fees for 1995 & 2004 POBs | 800 |
| | Dist. General Overhead | Health Reimbursement Arrangement Plan Admin | 5,000 |
| | Dist. General Overhead | Modular Furniture Maintenance, Setup, and Moving Services | 15,000 |
| | Dist. General Overhead | Online Benefits Enrollment/Administration | 47,000 |
| | Dist. General Overhead | Oracle Software Support | 30,400 |
| | Dist. General Overhead | PeopleSoft Maintenance | 208,400 |
| | Dist. General Overhead | Security Alarm Monitoring | 1,534 |
| | Dist. General Overhead | Security Guard Services | 450,000 |
| | Dist. General Overhead | Wellness Program | 15,000 |
| | Sub-total District General | | \$1,156,029 |
| Governing Board | Operational Support | Board Member Assistant/Consultants | \$436,777 |
| | Sub-total Governing Board | | \$436,777 |
| Executive Office | Develop Programs | Professional & Special Services | \$50,000 |
| | Sub-total Executive Office | | \$50,000 |
| Finance | Operational Support | AB 2766 Audit of DMV Fee Recipients | \$10,000 |
| | Operational Support | Bank Service Charges/Los Angeles County Treasurer Office | 60,000 |
| | Ensure Compliance | Bank Services Fund 15, Hot Spots Lockbox | 15,000 |
| | Operational Support | Financial Audit | 40,000 |
| | Operational Support | Financial Consultant for Treasury Management | 22,000 |
| | Operational Support | LA County Treasurer Office - PGP Maintenance | 1,500 |
| | Sub-total Finance | | \$148,500 |
| Legal | Ensure Compliance | Experts/Court Reporters/Attorney Services | \$25,000 |
| | Ensure Compliance | Litigation Counsel | 164,500 |
| | Ensure Compliance | Software Maintenance & Licensing - Courtview Justice Solutions | 30,000 |
| | Operational Support | Specialized Legal Services | 60,000 |
| | Sub-total Legal | | \$279,500 |

SERVICES & SUPPLIES

| Proposed Fiscal Year 2014-15 Professional & Special Services Detail by Office (cont.) | | | |
|--|---|---|------------------|
| Office | Program | Contract Description | Amount |
| Administrative & Human Resources | Operational Support | Architectural, Engineering and Surveyor Consultants | \$3,250 |
| | Operational Support | Classification Study & Consulting Services | 30,000 |
| | Operational Support | In-house Training Classes | 500 |
| | Operational Support | Insurance Broker of Record | 55,000 |
| | Operational Support | Locksmith | 2,000 |
| | Operational Support | Medical Services Provider | 13,000 |
| | Operational Support | NEOGOV Subscription License | 8,000 |
| | Operational Support | Occupational Health Services | 10,000 |
| | Operational Support | Office Ergonomics Evaluations and Training | 10,000 |
| | Customer Service & Business Assistance | Outside Binding Services | 6,000 |
| | Customer Service & Business Assistance | Outside Printing Services | 5,000 |
| | Operational Support | Test Development | 15,000 |
| | Operational Support | Third-Party Claims Administrator for Workers Compensation | 45,000 |
| | Sub-total Administrative & Human Resources | | \$202,750 |
| Clerk of the Boards | Ensure Compliance | Court Reporting, Audiovisual, and/or Security Services | \$4,000 |
| | Ensure Compliance | Outside Legal Contract | 15,000 |
| | Ensure Compliance | Professional Interpreter Services | 6,400 |
| | Sub-total Clerk of the Boards | | \$25,400 |
| Media Office | Policy Support | Graphics, Printing & Outreach Materials | \$4,000 |
| | Policy Support | News Release Services | 9,000 |
| | Policy Support | Photographic & Video Services | 5,000 |
| | Policy Support | Radio/Television Monitoring | 11,000 |
| | Sub-total Media Office | | \$29,000 |
| Information Management | Operational Support | Action Works Metro System Software Support | \$30,000 |
| | Operational Support | AER & R1113/314 Upgrade & Maintenance | 15,000 |
| | Operational Support | AIS (Address Information System) Five Digit subscription | 1,100 |
| | Operational Support | Anti-Spam Maintenance/Support | 11,500 |
| | Operational Support | AQMD Web Application Modifications | 20,000 |

SERVICES & SUPPLIES

| Proposed Fiscal Year 2014-15 Professional & Special Services Detail by Office (cont.) | | | |
|---|---------------------|--|----------|
| Office | Program | Contract Description | Amount |
| Information Management (cont.) | Operational Support | Backup Software | \$28,500 |
| | Operational Support | Backup Utility Maintenance | 9,500 |
| | Operational Support | CLASS System Maintenance | 80,000 |
| | Operational Support | Computer-Based Training Software Support | 1,800 |
| | Operational Support | Crystal Reports Software Support | 20,000 |
| | Operational Support | Dundas Chart Software Support | 700 |
| | Operational Support | Email Recovery Software (PowerControls) Maint/Support | 1,750 |
| | Operational Support | Email Reporting | 3,800 |
| | Operational Support | ERwin ERX & BPwin SW Support | 24,000 |
| | Operational Support | Faxcom FaxServer Support | 12,500 |
| | Operational Support | Imaging Software Support | 125,000 |
| | Operational Support | Ingres/OpenIngres Additional Licensing | 72,000 |
| | Operational Support | Ingres/OpenIngres Advanced Success Pack | 140,000 |
| | Operational Support | Installshield Software Support | 3,600 |
| | Operational Support | Internet Filtering (SmartFilter) Maintenance/Support | 35,000 |
| | Operational Support | Kronos Time Keeper | 2,000 |
| | Operational Support | Microsoft Developer Network CD - Application Development | 15,196 |
| | Operational Support | Microsoft Developer Network Premium Renewal | 4,000 |
| | Operational Support | Microsoft Technical Software Support (Server Applications) | 15,000 |
| | Operational Support | Microsoft Virtual Earth Maintenance/Support | 12,500 |
| | Operational Support | Network Analyzer (Sniffer) Maintenance/Support | 4,500 |
| | Operational Support | Network Backbone Support | 15,000 |
| | Operational Support | NT Software Support - Proactive | 62,000 |
| | Operational Support | Off-site Document Destruction Services | 15,000 |
| | Operational Support | Off-site Storage Nightly Computer Backup | 25,000 |
| | Operational Support | Off-Site Storage Services | 10,000 |

SERVICES & SUPPLIES

| Proposed Fiscal Year 2013-14 Professional & Special Services Detail by Office (cont.) | | | |
|--|---|--|------------------|
| Office | Program | Contract Description | Amount |
| Information Management (cont.) | Operational Support | Online Filing Infrastructure | \$25,000 |
| | Operational Support | PowerBuilder Software Support | 24,000 |
| | Operational Support | Proxy Reporting Support | 3,250 |
| | Operational Support | PVCS Software Support | 4,500 |
| | Operational Support | ScaleOut StateServer Maintenance | 2,000 |
| | Operational Support | Secure Service Digital ID DEC Internet Server | 850 |
| | Operational Support | Secure Service Digital ID Services | 1,000 |
| | Operational Support | Silk Test, Silk Central Test Manager, and Silk Performer Maintenance and Support | 22,500 |
| | Operational Support | Sitefinity CMS Software Support | 9,500 |
| | Operational Support | Software Support for EOS.Web Enterprise | 6,300 |
| | Operational Support | Software Support for On-Line Catalog | 2,050 |
| | Operational Support | Swiftview Software Support | 950 |
| | Operational Support | Telephone Switchview Software Support | 9,500 |
| | Operational Support | Terminal Emulation (Reflection) Maintenance/Support | 1,175 |
| | Operational Support | Videoteleconferencing Maintenance & Support | 13,000 |
| | Operational Support | Virus Scan Support | 15,000 |
| | Operational Support | Visual Expert Software Support | 6,000 |
| | Operational Support | Web Consulting Support | 10,000 |
| | Operational Support | Web Core Technology Upgrade (.NET upgrade) | 10,000 |
| | Sub-total Information Management | | \$982,521 |
| Planning, Rules, & Area Sources | Ensure Compliance | AER Printing | \$5,000 |
| | Develop Programs | California Emissions Estimator Model (CalEEMod) Upgrades/Support | 10,000 |
| | Develop Programs | CEQA for AQMD Projects | 20,000 |
| | Monitoring Air Quality | Check Before You Burn Programming Support | 50,000 |
| | Develop Rules | Coating Application Techniques | 50,000 |
| | Monitoring Air Quality | Contracted Communication Services | 5,000 |
| | Timely review of Permits | Dispersion Modeling Support | 20,000 |
| | Develop Programs | Dun & Bradstreet Data | 30,000 |

SERVICES & SUPPLIES

| Proposed Fiscal Year 2014-15 Professional & Special Services Detail by Office (cont.) | | | |
|--|---|---|--------------------|
| Office | Program | Contract Description | Amount |
| Planning, Rules, & Area Sources (cont.) | Monitoring Air Quality | Maintain Wind Stations and Analyze Data | \$60,000 |
| | Monitoring Air Quality | Meteorological Data Services | 7,500 |
| | Develop Rules | PM and Ozone Model Consulting | 50,000 |
| | Develop Rules | Polymer Research and Technology Transfer of Coatings | 50,000 |
| | Develop Programs | REMI Renewal | 51,000 |
| | Develop Programs | Rule 2202 Computer System Maintenance | 15,000 |
| | Develop Programs | SIP, AQMP and Rule Printing | 5,000 |
| | Develop Rules | Software/Hardware Maintenance in Support of Regional Modeling | 5,000 |
| | Develop Programs | STAMPFRAG Member Sole Source Contracts | 28,000 |
| | Ensure Compliance | Technology Assessment Studies | 50,000 |
| | Monitoring Air Quality | Weather Data Services Communications | 7,500 |
| | Sub-total Planning, Rules & Area Sources | | \$519,000 |
| Legislative & Public Affairs | Policy Support | After-hours Call Center Service | \$3,500 |
| | Customer Service & Business Assistance | Clean Air Awards | 12,600 |
| | Customer Service & Business Assistance | Community Outreach | 160,000 |
| | Policy Support | Graphics & Printing | 33,616 |
| | Policy Support | Legislative Advocacy - Sacramento | 365,000 |
| | Policy Support | Legislative Advocacy - Washington DC | 440,600 |
| | Policy Support | Legislative Computer Services | 10,000 |
| | Customer Service & Business Assistance | Multi-Lingual Translation - Public Participation | 20,000 |
| | Policy Support | Photographic and Video Services | 50,000 |
| | Customer Service & Business Assistance | Promotion Marketing of Smart Phone Tools | 50,000 |
| | Sub-total Legislative & Public Affairs | | \$1,145,316 |

SERVICES & SUPPLIES

| Proposed Fiscal Year 2014-15 Professional & Special Services Detail by Office (cont.) | | | |
|--|--|---|--------------------|
| Office | Program | Contract Description | Amount |
| Science & Tech. Advancement | Ensure Compliance | Laboratory Analytical Services | \$15,000 |
| | Ensure Compliance | Source Testing Services | 30,000 |
| | Ensure Compliance | Technical Support for Air Monitoring and Community Complaint Resolution | 35,000 |
| | Sub-total Science & Technology Advancement | | \$80,000 |
| Engineering & Compliance | Operational Support | Workspace Reconfiguration | \$5,000 |
| | Sub-total Engineering & Compliance | | \$5,000 |
| | Total Professional & Special Services Request | | \$5,059,793 |

CAPITAL OUTLAYS & BUILDING REMODELING

| Acct. # | Account Description | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2013-14 Estimate | FY 2014-15 Proposed Budget | Increase/ (Decrease) ^(a) |
|---------|---------------------|---------------------------|---------------------------|---------------------|----------------------------|-------------------------------------|
| 77000 | CAPITAL OUTLAYS | \$ 1,537,500 | \$ 2,513,250 | \$ 2,496,567 | \$ 1,062,500 | (\$ 475,000) |

This account is for tangible asset expenditures with a value of at least \$5,000 and a useful life of at least three years and intangible asset expenditures with a value of at least \$5,000 and a useful life of at least one year. The decrease from the FY 2013-14 Adopted Budget reflects anticipated needs. The FY 2014-15 Proposed Budget does not include amounts for federally funded grant programs. An expenditure appropriation will occur mid-year when the grants are awarded.

The following is a listing by office of the approved Capital Outlays for FY 2014-15.

| Fiscal Year 2014-15 Capital Outlays Detail | | | | | |
|---|--------------------------------|-------------|--|--------------------------|--------------------|
| Item # | Office | Category | Description | Program | Amount |
| 1 | District General | Replacement | System Support and Programming (PeopleSoft/CLASS) | Operational Support | \$75,000 |
| 2 | | N/A | Unbudgeted Capital Outlay | Operational Support | 75,000 |
| Sub-total District General | | | | | \$150,000 |
| 3 | Planning, Rules & Area Sources | Replacement | Architectural Coating Reporting & Fee Billing | Develop Rules | \$50,000 |
| 4 | | Replacement | Support Web-based Annual Emissions Reporting (AER) Program | Ensure Compliance | 100,000 |
| Sub-total Planning, Rules & Area Sources | | | | | \$150,000 |
| 5 | Information Management | New | e-Government Infrastructure | Operational Support | \$27,500 |
| 6 | | New | Misc Telecommunication Upgrade/Enhancement | Operational Support | 35,000 |
| 7 | | New | PeopleSoft Migration/Upgrade | Operational Support | 250,000 |
| 8 | | Replacement | Systems Replacement - Financial Systems | Operational Support | 150,000 |
| 9 | | Replacement | Systems Replacement - Integrated On-Line Permit Processing | Operational Support | 250,000 |
| Sub-total Information Management | | | | | \$712,500 |
| 10 | Engineering & Compliance | New | PAATS/Title V Tracking Updates | Timely Review of Permits | \$25,000 |
| 11 | | New | Permit Processing System (PPS) Updates | Timely Review of Permits | 25,000 |
| Sub-total Engineering & Compliance | | | | | \$50,000 |
| Total Capital Outlays Request | | | | | \$1,062,500 |

^(a)FY 2014-15 Proposed Budget vs. FY 2013-14 Adopted Budget.

CAPITAL OUTLAYS & BUILDING REMODELING

| Acct. # | Account Description | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2013-14 Estimate | FY 2014-15 Proposed Budget | Increase/ (Decrease) ^(a) |
|---|--------------------------------|---------------------------------|---------------------------------|------------------------|----------------------------------|--|
| 79050 | BUILDING REMODELING | \$0 | \$0 | \$0 | \$0 | \$0 |
| <p>This account is used for minor remodeling projects which become necessary as a result of reorganizations or for safety reasons. No projects are anticipated in FY 2014-15.</p> | | | | | | |

^(a)FY 2014-15 Proposed Budget vs. FY 2013-14 Adopted Budget.

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
DRAFT GOALS AND PRIORITY OBJECTIVES FOR FY 2014-2015**

MISSION STATEMENT

“All residents have a right to live and work in an environment of clean air and we are committed to undertaking all necessary steps to protect public health from air pollution with sensitivity to the impacts of our actions on the community, public agencies and businesses.”

VALUES

- S** Sound scientific, technical, and legal basis for actions
- C** Customer service
- A** Air that is healthful to breathe
- Q** Quality programs that are effective and efficient
- M** Multiple partnerships and collaboration with stakeholders
- D** Developing solutions for the future

GOALS AND PRIORITY OBJECTIVES

The following Goals and Priority Objectives have been identified as being critical to meeting SCAQMD’s Mission in Fiscal Year 2014-15.

GOAL I. Ensure expeditious progress toward meeting clean air standards and protecting public health.

| Priority Objective/Project | Outcome |
|--|---|
| 1. Implement 2012 AQMP | Adopt/implement measures scheduled for 2014. |
| 2. Initiate development of 2016 AQMP | Conduct technical and policy analyses and produce white papers in preparation for the 2016 AQMP, while enhancing the AQMP development process including early stakeholder input and close collaboration, and conducting socioeconomic methodology review. Present the socioeconomic methodology review to the Governing Board and appropriate committees/work groups and recommend further action. |
| 3. Ensure compliance through a program that includes using community-based and/or industry specific deployment of field personnel. | Inspect all Major or RECLAIM sources at least annually and inspect all chrome plating facilities quarterly. Conduct a total of 22,000 site visits for compliance evaluations and perform inspections of 3,500 portable equipment and 2,200 Asbestos demolition or renovation activities. Expand targeted evaluation program for select industries, including, but not limited to metal processing, oil production, and waste processing facilities. |
| 4. Prioritize prosecution of high-impact enforcement cases to maximize deterrence for air pollution violations | Enhance prosecution of high-impact enforcement cases, such as prosecutions of major or serial violators, major toxic releases, significant public nuisance cases, or companies having violations at several locations. Achieve satisfactory resolution of these cases to reduce health impacts and provide for future deterrence. |

GOAL I. Ensure expeditious progress toward meeting clean air standards and protecting public health. (Continued)

| Priority Objective/Project | Outcome |
|---|--|
| 5. Ensure compliance through a program that includes timely processing of permit applications for stationary sources | Process all complete applications for permits, plans and ERCs in a timely manner and in compliance with all statutory requirements. Process a total of 8,800 applications, including 2,200 Permits to Construct (new construction, modification or relocations). Process all Title V Permit Renewals in timely manner and meet all statutory requirements. Through SCAQMD's Small Business Assistance program help more local businesses understand the permit process, prepare and submit permit applications, and expand efforts to educate small business owners about the agency and compliance. Begin process of reviewing and updating standard permit conditions for specific equipment or industries. Prepare a presentation for the Stationary Source Committee to provide a status of the permit process and convene permit streamlining working groups. |
| 6. Continue to implement SCAQMD's Environmental Justice (EJ) policies and programs, and other initiatives directed at equitable treatment for all communities and sensitive populations | Increase awareness of the SCAQMD in EJ communities and work with residents and community leaders to remedy their air quality concerns. Formalize internal response team to coordinate and streamline agency response to community concerns, increased partnerships with health, educational, and other organizations in impacted communities. Representation of SCAQMD on community task forces and other organizations as appropriate, including business organizations to help mitigate current and prevent future air quality impacts. |
| 7. Enhance community response program | Assess current SCAQMD community response program and identify measurement techniques and protocols with consideration to recurring types of community concerns and update the program accordingly to be more informative and responsive to impacted communities in a more timely manner. Develop an enhanced communication plan to inform the community regarding complaints. |
| 8. Continue to respond expeditiously and effectively to community issues that require the deployment of air monitoring resources | Enhance monitoring and response capabilities through technology improvements, a focus of resources, and efficiency improvements to address future community air quality concerns. Evaluate personal monitors for air quality accuracy. |
| 9. Implementation of AB 8 (Carl Moyer AB 923 and AB 118 H2 funding.) | Develop approaches to maximize deployment of zero and near zero-emission vehicles in EJ areas. Continue Carl Moyer AB 923 Program with enhancements identified above. Assist hydrogen station rollout in the South Coast region. |
| 10. Complete implementation of heavy-duty replacement trucks for small fleets under the Proposition 1B-Goods Movement Program. | The program will reduce emissions from older trucks with 2010 certified trucks, and will help small fleets be in compliance with CARB's truck and bus regulation requirements. |

GOAL I. Ensure expeditious progress toward meeting clean air standards and protecting public health. (Continued)

| Priority Objective/Project | Outcome |
|---|--|
| 11. Develop and demonstrate advanced natural gas engines and zero-emission technologies for locomotives. | Issue RFP for the development of natural gas-powered passenger and freight locomotives and start demonstration program as appropriate. Issue RFP for the demonstration of zero-emission technologies applicable to locomotives including hybrid systems and battery-tender car concepts. |
| 12. Continue development and demonstration of Zero Emission Container Movement Technologies, and initiate deployment with strategies and policies to enable the market. | Initiate demonstration of zero emission technology projects and continue working with stakeholders to enable the market for these technologies through incentives, policies and regulations. |
| 13. Multiple Air Toxics Exposure Study (MATES IV) and Risk Assessment Methodology Update. | Complete exposure assessment and risk estimates based on regional modeling of air toxics emissions. Prepare MATES IV report. Implement Risk Assessment Methodology update approved by the State of California. |
| 14. Continue implementation of Clean Communities Pilot Study for Boyle Heights and San Bernardino. | Complete remaining projects and programs for both communities to address cumulative air quality issues. Produce final program report. Implement Clean Vehicle Rebate Pilot for EJ areas. |
| 15. Implement the fireplace/woodstove exchange voucher incentive program in and around Mira Loma. | Implement a targeted incentive program to improve PM2.5 air quality in and around Mira Loma and help the Basin reach attainment with federal PM2.5 standards. |
| 16. Work proactively on drought related air quality impacts and needed response. | Drought response plan with action items to be implemented. |
| 17. Develop and demonstrate low emission energy generation technology as well as energy storage options. | Initiated demonstration projects and continue working with stakeholders to facilitate additional power options. |

GOAL II. Enhance public education and ensure equitable treatment for all communities.

| Priority Objective/Project | Outcome |
|--|---|
| 1. Employ the latest communication technologies; engage in community based programs and outreach events; and foster relationships with traditional media outlets | Heighten public awareness of air quality issues that affect public health to motivate decision makers and other key stakeholders to give higher priority to air quality issues and concerns; encourage targeted public members and key stakeholders to take personal actions to reduce air pollution; Actively engage the public, through town hall and community meetings, as well as social media and the SCAQMD webpage, to increase their communication with the agency and advocacy for our clean air efforts. |
| 2. Continue timely response to community complaints | Respond to all air quality complaints received by SCAQMD within 24 hours. |

GOAL III. Operate efficiently and in a manner sensitive to public agencies, businesses, the public and SCAQMD staff.

| Priority Objective/Project | Outcome |
|---|---|
| 1. Maintain a knowledgeable, professional and well-trained staff | Provide training and educational opportunities to ensure up-to-date expertise and competency in core agency functions. Develop leadership development programs to ensure a smooth transition of key leadership positions within the agency. |
| 2. Continue to overhaul SCAQMD's information technology systems, including the use of state of the art software, hardware, and communications systems to improve overall agency effectiveness and efficiency. | Implement and integrate the Legal Division's case and document management software system with SCAQMD's current permitting, enforcement and imaging databases to efficiently track and manage assignments and case documents. Replace the phone switch with a hardware/software system that utilizes unified communication technology, integrating all forms of communication that are exchanged via a network. Expand mapping infrastructure into a GIS portal for many SCAQMD mapping functions. Continue to support and seek permit processing efficiencies through automation and IT solutions. |
| 3. Provide excellent customer service to the business and regulated community, as well as other stakeholders. | Ensure that all stakeholders are treated as partners, and that regulations, requirements and objectives are made clear early in the permitting, rulemaking and planning processes. Work with stakeholders in a cooperative and collaborative manner toward air quality goals and related activities in a timely and cost-effective manner, always seeking to balance public health with business retention, economic growth, and job creation, while meeting Federal and State Clean Air Laws. |
| 4. Build and maintain partnerships with public agencies, stakeholder groups and the business community. | Further enhanced outreach programs to public agencies in areas including, but not limited to, rulemaking and rule implementation and enforcement, regional air quality impacts and attainment strategies, and other issues affecting public agencies, especially local government and issues related to future waste diversion requirements. Develop partnerships with local jurisdictions and regional agencies, and seek cooperative strategies for achieving air quality goals and objectives while supporting local control and sustainable economic growth, and leveraging local efforts to improve the health and well-being of residents. Develop new partnerships with the business and regulated communities, as well as environmental justice, environmental organizations, and community groups through outreach to, and participation in, various activities, conferences, and other opportunities to cultivate early and continuing cooperative relationships. |
| 5. Ensure rulemaking is transparent and inclusive. | Implement early and continuing outreach to affected and interested stakeholders, including businesses, local agencies, environmental justice and environmental groups, and affected communities in the rulemaking process, and provide ample opportunity for input and collaboration. |

PROGRAM CATEGORIES

ADVANCE CLEAN AIR TECHNOLOGY

Identify technologies from anywhere in the world that may have application in reducing emissions from mobile and stationary sources in the SCAQMD's jurisdiction. Suggest strategies to overcome any barriers and, when appropriate, implement those strategies.

- (A) Identify short-term and long-term technical barriers to the use of low-emission clean fuels and transportation technologies.
- (B) Promote development and assess the use of clean fuels and low-emitting technologies.
- (C) Work with industry to promote research and development in promising low-emission technologies and clean fuels.
- (D) Provide technical and program support to the Mobile Source Air Pollution Reduction Review Committee (MSRC).
- (E) Conduct source tests and analysis of samples to assess effectiveness of low-emissions technology.
- (F) Implement and administer state-funded programs such as the Carl Moyer program for retrofitting, re-powering, or replacing diesel engines with newer and cleaner engines and the Proposition 1B program that provides funding for projects to reduce air pollution associated with freight movement along California's trade corridors.

ENSURE COMPLIANCE WITH CLEAN AIR RULES

Ensure compliance with SCAQMD rules for existing major and small stationary sources.

- (A) Verify compliance with SCAQMD rules through inspections, sample collections, Visible Emissions Evaluations, certification of Continuous Emission Monitoring Systems (CEMS), and emissions audits.
- (B) Issue Notices of Violation for major violations when discovered or a Notice to Comply for minor violations or to request records.
- (C) Respond to and resolve public complaints concerning air pollution.
- (D) Participate in Hearing Board cases, investigate breakdowns and notifications of demolitions or renovations of structures which may contain asbestos, conduct periodic monitoring, and observe source tests.
- (E) Respond to industrial and chemical emergencies when requested by other agencies.
- (F) Provide training classes for compliance with various SCAQMD rules such as Gasoline Transfer and Dispensing (Rule 461), Asbestos Demolition and Renovation (Rule 1403), Chrome Plating Operations (Rule 1469), Fugitive Dust Plans (Rule 403 & 403.1), Sump and Wastewater Separators (Rule 1176) and Combustion Gas Portable Analyzer Training & Certification (Rules 1146, 1146.1 & 1110.2).

PROGRAM CATEGORIES

CUSTOMER SERVICE AND BUSINESS ASSISTANCE

- (A) Provide local government, business and the public with accesses and input into the regulatory and policy processes of the SCAQMD.
- (B) Assist cities and others with AB 2766 projects.
- (C) Interact with local, state and federal agencies as well as others to share air quality information, resolve jurisdictional questions, and implement joint programs.
- (D) Support air pollution reduction through implementation of comprehensive public information, legislative and customer service programs.
- (E) Provide small business assistance services and support economic development and business retention activities.
- (F) Make presentations to and meet with regulated organizations, individuals, public agencies and the media.
- (G) Notify all interested parties of upcoming changes to air quality rules and regulations through public meetings, workshops, and printed and electronic information.
- (H) Resolve permit- and fee-related problems and provide technical assistance to industry.
- (I) Respond to Public Records Act requests.
- (J) Produce brochures, newsletters, television, radio and print media information and materials, and electronic information.
- (K) Respond to letters and Internet inquiries from the public and to media inquiries and requests.

DEVELOP PROGRAMS TO ACHIEVE CLEAN AIR

Develop a regional Air Quality Management Plan (AQMP) to achieve federal and state ambient air quality standards and to meet all other requirements of the federal and California Clean Air Acts.

- (A) Analyze air quality data and provide an estimation of pollutant emissions by source category.
- (B) Develop pollutant control strategies and project future air quality using computer models and statistical analysis of alternative control scenarios.
- (C) Analyze issues pertaining to air toxics, acid deposition, and potential socioeconomic and environmental impacts (CEQA) of SCAQMD plans and regulations.
- (D) Conduct outreach activities to solicit public input on proposed control measures.
- (E) Implement Rule 2201 On-Road Motor Vehicle Mitigation Options and process employee commute reduction program submittals and registrations. Provide one-on-one assistance to employers to ensure compliance with the rule.
- (F) Develop and update emissions inventories; conduct in-house auditing of annual emission reports; conduct field audits.

PROGRAM CATEGORIES

DEVELOP RULES TO ACHIEVE CLEAN AIR

Develop emission reduction regulations for sulfur dioxide, nitrogen dioxide, organic gases, particulate matter, toxics, and other pollutants to implement the regional AQMP, Tanner Air Toxics Process (AB 1807), National Emission Standards for Hazardous Air Pollutants (NESHAPS), and Prevention of Significant Deterioration (PSD) requirements.

- (A) Provide an assessment of control technologies, evaluation of control cost, source testing and analysis of samples to determine emissions.
- (B) Test and analyze products and processes to demonstrate pollution reduction potential.
- (C) Solicit public input through meetings and workshops.
- (D) Prepare rules to provide flexibility to industry, ensure an effective permit program and increase rule effectiveness.
- (E) Evaluate effectiveness of area source rules, evaluate area source emission inventories, and propose new rules or amendments to improve implementation of area source programs, including the certification/registration of equipment, and as necessary pursuant to statewide regulatory requirements.
- (F) Implement the AQMP. Develop feasibility studies and control measures.
- (G) Conduct research and analyze health effects of air pollutants and assess the health implications of pollutant reduction strategies.

MONITORING AIR QUALITY

Operate and maintain within SCAQMD's jurisdiction a network of air quality monitoring sites for ozone, nitrogen oxides, sulfur oxides, particulate matter, carbon monoxide and other pollutants to obtain data regarding public exposure to air contaminants.

- (A) Analyze, summarize, and report air quality information generated from the monitoring sites.
- (B) Provide continuous records for assessment of progress toward meeting federal and state air quality standards.
- (C) Develop and prepare meteorological forecasts and models.
- (D) Respond to emergency requests by providing technical assistance to first-response public safety agencies.
- (E) Notify the public, media, schools, regulated industries and others whenever predicted or observed levels exceed the episode levels established under state law.
- (F) Conduct special studies such as MATES IV, National Air Toxics Trends (NATTS), Port Air Quality Monitoring, Near Road NO₂ Monitoring, and TraPac Air Filtration Program.

PROGRAM CATEGORIES

OPERATIONAL SUPPORT

Provide operational support to facilitate overall air quality improvement programs.

- (A) Provide services that enable SCAQMD offices to function properly. Services include facility administration, human resources and financial services.
- (B) Provide information management services in support of all SCAQMD operations, including automation of permitting and compliance records, systems analysis and design, computer programming and operations, records management, and the library.
- (C) Provide legal support and representation on all policy and regulatory issues and all associated legal actions.

TIMELY REVIEW OF PERMITS

Ensure timely processing of permits for new sources based on compliance with New Source Review and other applicable local, state and federal air quality rules and regulations.

- (A) Process applications for Permits to Construct and/or to Operate for new construction, modification and change of operations of equipment from major and non-major sources.
- (B) Process Title V permits (Initial, Renewal, and Revisions) and facility permits for RECLAIM sources.
- (C) Process applications for Administrative Changes, Change of Operator, Plans and Emission Reductions Credits (RTC).
- (D) Continue efforts to streamline and expedite permit issuance through:
 - (1) Equipment certification/registration programs
 - (2) Area sources filing program
 - (3) Streamlined standard permits
 - (4) Certification of Permit Processing (CPP) professionals
 - (5) Enhancement of permitting systems
 - (6) Expedited Permit Processing Program

POLICY SUPPORT

Monitor, analyze and attempt to influence the outcome of state/federal legislation.

- (A) Track changes to the state/federal budgets that may affect SCAQMD.
- (B) Respond to Congressional and Senatorial inquiries regarding SCAQMD programs, policies or initiatives.
- (C) Assist SCAQMD consultants in identifying potential funding sources and securing funding for SCAQMD programs.

PROGRAM CATEGORIES

- (D) Provide support staff to the Governing Board, Board committees, and various advisory and other groups such as the Air Quality Management Plan Advisory Group, the Environmental Justice Advisory Group; the Home Rule Advisory Group; the Local Government and Small Business Assistance Advisory Group; the Mobile Source Air Pollution Reduction Review Committee (MSRC) and MSRC Technical Advisory Committee; the Scientific, Technical and Modeling Peer Review Advisory Group; the Technology Advancement Advisory Group; as well as ad hoc committees established from time to time and various Rule working groups.

REVENUE CATEGORIES

I. **Allocatable**

A portion of SCAQMD revenue offsets operational support costs of the SCAQMD.

1a Allocatable SCAQMD – District-wide administrative and support services (e.g., Human Resources, Payroll, Information Management).

1b Allocatable – Office – Administrative activities specific to a given division/office.

II. **Annual Operating Emissions Fees**

III. **Permit Processing Fees**

IV. **Annual Operating Permit Renewal**

V. **Federal Grants/Other Federal Revenue**

VI. **Source Test/Sample Analysis Fees**

VII. **Hearing Board Fees**

VIII. **Clean Fuels Fees**

IX. **Mobile Sources**

X. **Air Toxics AB 2588**

XI. **Transportation Programs**

XII - XIV. These revenue categories are no longer used.

XV. **California Air Resources Board Subvention**

XVI. This revenue category is no longer used.

XVII. **Other Revenue**

XVIII. **Area Sources**

XIX. **Portable Equipment Registration Program (PERP)**

For a description of the revenue categories listed above, please refer to the corresponding revenue account in the FUND BALANCE & REVENUES tab, EXPLANATION OF FUNDING SOURCES section.

WORK PROGRAM OVERVIEW

The Fiscal Year 2014-15 Work Program was developed from individual Work Programs and output justifications submitted by each Office based on information and estimates for each activity. The Work Programs are tied to the FY 2014-15 Budget and the Work Programs for each Office can be found in the OFFICE BUDGETS section of this document. A glossary of terms and acronyms used in the Work Program is included at the end of this section.

The costs shown in the Work Program are based on average expenditures for Salaries and Benefits and most Services and Supplies costs. Professional & Special Services, Temporary Agency Services, and Capital Outlays expenditures are assigned to a specific work program code. A District General overhead cost has been apportioned to each Work Program line based on the number of Full-Time Equivalent (FTE) staff positions for that line.

A spreadsheet format is used to present the Work Program. The following is a brief description of each spreadsheet column:

The **#** column identifies each line in the Work Program in numerical order.

The **Program Code** is a five-digit code assigned to each program. The first two digits represent the Office number. The last three digits are the program number.

The **Goal** column identifies which of the three program goals (defined in the Draft Goals and Priority Objectives) applies to that output. The goals are:

- GOAL I** **Ensure expeditious progress toward meeting clean air standards and protection public health.**
- GOAL II** **Enhance public education and ensure equitable treatment for all communities.**
- GOAL III** **Operate efficiently and in a manner sensitive to public agencies, businesses, the public and SCAQMD staff.**

The **Office** column, which appears on the Work Program by Category document, identifies the Office expected to perform the work.

The **Program Category** column, which appears in the Work Program by Office section, identifies one of the nine program categories associated with an activity.

The **Program** column identifies the program associated with the work.

The **Activities** column provides a brief description of the work.

The **FTEs** column identifies the number of Full Time Equivalent (FTE) staff positions in the current-year adopted budget, mid-year and proposed changes (+/-), and the proposed budget for the next fiscal year. An FTE position represents one person-year.

The **COST** column, found in the Work Program by Category Schedules, identifies the costs in the current-year adopted budget, proposed changes (+/-) and the proposed budget for the next fiscal year.

The **Revenue Categories** column identifies the revenue that supports the work. Revenue Category descriptions can be found on the preceding page.

**Advance Clean Air Technology
Work Program by Category**

| # | Program Code | Goal | Office | Program | Activities | FTEs | | Cost | | Revenue Categories | | |
|--------------|--------------|------|--------|------------------------------------|---|--------------|-------------|--------------|---------------------|--------------------|---------------------|------------|
| | | | | | | FY 2013-14 | +/- | FY 2014-15 | +/- | | FY 2013-14 | FY 2014-15 |
| 1 | 108 | 001 | I | LEG AB2766/Mob Src/Legal Advice | AB2766 Leg Adv: Trans/Mob Source | 0.05 | | 0.05 | \$ 9,802 | \$ 18 | \$ 9,820 | IX |
| 2 | 104 | 003 | III | FIN AB2766/MSRC | MSRC Program Administration | 0.35 | | 0.35 | 45,693 | 1,237 | 46,930 | IX |
| 3 | 108 | 003 | I | LEG AB2766/MSRC | Legal Advice: MSRC Prog Admin | 0.10 | 0.05 | 0.15 | 19,604 | 9,856 | 29,460 | IX |
| 4 | 144 | 003 | I | STA AB2766/MSRC | Mob Src Review Comm Prg Admin | 1.00 | | 1.00 | 151,543 | 3,425 | 154,968 | IX |
| 5 | 144 | 004 | I | STA AB2766/MSRC/Contract Admin | AB2766 Admin Discretionary Prog | 3.00 | | 3.00 | 454,629 | 10,274 | 464,903 | IX |
| 6 | 144 | 039 | I | STA Admin/Office Mgt/Tech Adv | Admin Support/Coordination | 0.77 | | 0.77 | 116,688 | 2,637 | 119,325 | VIII |
| 7 | 144 | 048 | I | STA Admin/Prog Mgmt/Tech Advance | Overall TA Program Mgmt/Coord | 1.55 | | 1.55 | 234,891 | 5,308 | 240,200 | VIII |
| 8 | 144 | 066 | I | STA AQIP Marine SCR DPF | AQIP Marine SCR DPF/Admin/impl | 0.15 | | 0.15 | 22,731 | 514 | 23,245 | IX |
| 9 | 144 | 012 | I | STA AQMP/Control Tech Assessment | Tech Supp: Quantify Cost Effec | 0.10 | | 0.10 | 15,154 | 342 | 15,497 | VIII |
| 10 | 144 | 095 | I | STA CA Natural Gas Veh Partnership | CA Natural Gas Veh Partnership | 0.05 | | 0.05 | 7,577 | 171 | 7,748 | VIII |
| 11 | 104 | 130 | III | FIN Clean Fuels/Contract Admin | Clean Fuels Contract Admin/Monitor | 0.15 | | 0.15 | 19,583 | 530 | 20,113 | VIII |
| 12 | 144 | 130 | I | STA Clean Fuels/Contract Admin | Admin/Project Supp for TA Cont | 3.40 | | 3.40 | 515,246 | 11,644 | 526,890 | VIII |
| 13 | 108 | 131 | I | LEG Clean Fuels/Legal Advice | Legal Advice: Clean Fuels | 0.05 | | 0.05 | 9,802 | 18 | 9,820 | VIII |
| 14 | 144 | 132 | I | STA Clean Fuels/Mobile Sources | Dev/Impl Mobile Src Proj/Demo | 5.30 | (0.20) | 5.10 | 803,177 | (12,842) | 790,335 | VIII |
| 15 | 144 | 134 | I | STA Clean Fuels/Stationary Combust | Dev/Demo Clean Combustion Tech | 0.70 | | 0.70 | 106,080 | 2,397 | 108,477 | VIII |
| 16 | 144 | 135 | I | STA Clean Fuels/Stationary Energy | Dev/Demo Alt Clean Energy | 0.70 | | 0.70 | 106,080 | 2,397 | 108,477 | VIII |
| 17 | 144 | 136 | I | STA Clean Fuels/Tech Transfer | Disseminate Low Emiss CF Tech | 1.45 | | 1.45 | 232,337 | (7,634) | 224,703 | VIII |
| 18 | 144 | 188 | I | STA DERA FY 13 Veh Repl | DERA Vehicle Repl Admin/Impl | 0.00 | 0.20 | 0.20 | - | 30,994 | 30,994 | XVII |
| 19 | 144 | 190 | I | STA Diesel Projects EPA | Diesel Projects EPA/Admin/Impl | 0.11 | | 0.11 | 16,670 | 377 | 17,046 | V |
| 20 | 144 | 361 | I | STA HD Trucks DOE ARRA | DOE HD Trucks Admin (ARRA) | 2.00 | | 2.00 | 303,086 | 6,849 | 309,935 | XVII |
| 21 | 144 | 424 | I | STA LNG Trucks CEC | LNG Trucks Admin CEC | 1.00 | | 1.00 | 151,543 | 3,425 | 154,968 | IX |
| 22 | 144 | 457 | I | STA Mob Src/C Moyer Adm/Outreach | Carl Moyer: Impl/Admin Grant | 5.65 | | 5.65 | 856,217 | 19,350 | 875,567 | IX |
| 23 | 144 | 459 | I | STA Mob Src/C Moyer/Impl/Prg Dev | Moyer/implen/Program Dev | 2.80 | | 2.80 | 424,320 | 9,589 | 433,909 | IX |
| 24 | 108 | 457 | I | LEG Mob Src/C Moyer/Leg Advice | Moyer/implen/Program Dev | 0.20 | | 0.20 | 39,209 | 71 | 39,280 | IX |
| 25 | 144 | 453 | I | STA Mob Src: Emiss Inven Method | Rwv CARB/US EPA emissions inven methodology | 1.50 | | 1.50 | 227,314 | 5,137 | 232,451 | VIII,IX |
| 26 | 104 | 457 | III | FIN Mobile Source/Moyer Adm | Carl Moyer: Contract/Fin Admin | 1.02 | | 1.02 | 133,163 | 3,604 | 136,767 | IX |
| 27 | 103 | 455 | I | EO Mobile Sources | Dev/Impl Mobile Source Strategies | 0.10 | | 0.10 | 22,943 | 38 | 22,981 | IX |
| 28 | 116 | 457 | I | AHR MS/Carl Moyer Admin | C Moyer/Contractor Compliance | 1.00 | (0.50) | 0.50 | 167,037 | (81,678) | 85,359 | IX |
| 29 | 144 | 497 | I | STA Plug-in Hybrid EV DOE ARRA | DOE Plug-in Hybrid EV Admin (ARRA) | 0.75 | | 0.75 | 113,657 | 2,569 | 116,226 | V |
| 30 | 104 | 542 | I | FIN Prop 1B: Goods Movement | Contracts/Finance Admin | 0.50 | | 0.50 | 65,276 | 1,767 | 67,043 | IX |
| 31 | 116 | 542 | I | AHR Prop 1B: Goods Movement | Prop 1B: Goods Movement | 0.00 | 0.50 | 0.50 | - | 85,359 | 85,359 | IX |
| 32 | 104 | 544 | I | FIN Prop 1B: Low Emiss Sch Bus | Grants/Finance Admin | 0.05 | | 0.05 | 6,528 | 177 | 6,704 | IX |
| 33 | 144 | 677 | I | STA School Bus/Lower Emission Prog | School Bus Program Oversight | 0.20 | 0.50 | 0.70 | 30,309 | 78,169 | 108,477 | VIII |
| 34 | 26 | 738 | I | PRA Target Air Shed EPA | Targeted Air Shed Admin/impl | 0.50 | (0.25) | 0.25 | 79,056 | (38,695) | 40,360 | XVII |
| 35 | 144 | 738 | I | STA Target Air Shed EPA | Targeted Air Shed Admin/impl | 0.15 | | 0.15 | 22,731 | 514 | 23,245 | XVII |
| 36 | 144 | 740 | I | STA Tech Adv/Commercialization | Assess CFs/Adv Tech Potential | 0.25 | | 0.25 | 37,886 | 856 | 38,742 | VIII |
| 37 | 144 | 741 | I | STA Tech Adv/Non-Combustion | Dev/Demo Non-Combustion Tech | 0.10 | | 0.10 | 15,154 | 342 | 15,497 | VIII |
| 38 | 144 | 816 | I | STA Transportation Research | Transport Research/Adv Systems | 0.50 | | 0.50 | 75,771 | 1,712 | 77,484 | VIII |
| 39 | 144 | 460 | I | STA VIP Admin | VIP Admin/Outreach/impl | 0.80 | | 0.80 | 121,234 | 2,740 | 123,974 | IX |
| Total | | | | | | 38.05 | 0.30 | 38.35 | \$ 5,779,722 | \$ 163,557 | \$ 5,943,280 | |

A prorated share of the District General budget has been allocated to each line in the workplan based on the number of FTEs reflected on the line.

**Ensure Compliance with Clean Air Rules
Work Program by Category**

| # | Program Code | Goal | Office | Program | Activities | FTEs | | Cost | | Revenue Categories | |
|----|--------------|------|--------|---------|---------------------------------|------------|--------|------------|----------|--------------------|--------------|
| | | | | | | FY 2013-14 | +/- | FY 2014-15 | +/- | | FY 2013-14 |
| 1 | 44 | 015 | I | STA | Acid Rain CEMS Eval/Cert | 0.50 | | \$ 75,771 | \$ 1,712 | \$ 77,484 | II,IV |
| 2 | 26 | 042 | I | PRA | Admin: Compl w SCAQMD Rules | 0.25 | | 39,528 | 832 | 40,360 | 1b |
| 3 | 26 | 046 | I | PRA | Admin/Office Mgmt/Compliance | 0.00 | 0.52 | - | 83,949 | 83,949 | 1b |
| 4 | 44 | 042 | I | STA | Admin/Office Mgmt/Compliance | 0.37 | | 56,071 | 1,267 | 57,338 | 1b |
| 5 | 26 | 215 | I | PRA | Annual Emission Reporting | 4.00 | 3.50 | 737,445 | 578,361 | 1,315,806 | II,V |
| 6 | 50 | 071 | I | EAC | Arch Ctgs - Admin | 0.10 | | 14,607 | 366 | 14,973 | XVIII |
| 7 | 08 | 072 | I | LEG | Arch Ctgs - End User | 0.05 | | 9,802 | 18 | 9,820 | XVIII |
| 8 | 26 | 072 | I | PRA | Arch Ctgs - End User | 1.00 | | 158,111 | 3,329 | 161,441 | XVIII |
| 9 | 44 | 072 | I | STA | Arch Ctgs - End User | 1.00 | | 151,543 | 3,425 | 154,968 | XVIII |
| 10 | 50 | 072 | I | EAC | Arch Ctgs - End User | 0.10 | | 14,607 | 366 | 14,973 | XVIII |
| 11 | 08 | 073 | I | LEG | Arch Ctgs - Other | 0.50 | (0.30) | 98,021 | (58,742) | 39,280 | XVIII |
| 12 | 26 | 073 | I | PRA | Arch Ctgs - Other | 1.00 | | 158,111 | 3,329 | 161,441 | XVIII |
| 13 | 50 | 073 | I | EAC | Arch Ctgs - Other | 4.50 | | 657,337 | 16,458 | 673,794 | XVIII |
| 14 | 26 | 076 | I | PRA | Area Sources/Compliance | 3.50 | (0.50) | 603,390 | (69,067) | 534,322 | IV,IX,XV |
| 15 | 16 | 080 | III | AHR | Auto Services | 3.00 | | 501,110 | 11,045 | 512,155 | 1a |
| 16 | 35 | 111 | II | LPA | Call Center/CUT SMOG | 8.00 | | 1,229,980 | 16,417 | 1,246,397 | IX,XV |
| 17 | 50 | 070 | I | EAC | CARB PERP Program | 7.00 | | 1,022,524 | 25,601 | 1,048,124 | XIX |
| 18 | 08 | 115 | I | LEG | Case Disposition | 6.00 | | 1,176,256 | 2,136 | 1,178,392 | II,IV,VII,XV |
| 19 | 44 | 105 | I | STA | CEMS Certification | 6.15 | | 931,989 | 21,062 | 953,051 | III,VI |
| 20 | 50 | 155 | I | EAC | Compliance Guidelines | 0.50 | | 73,037 | 1,829 | 74,866 | II |
| 21 | 50 | 158 | I | EAC | Compliance Testing | 1.00 | | 146,075 | 3,657 | 149,732 | II |
| 22 | 50 | 152 | III | EAC | Compliance/IM Related Activiti | 0.50 | | 73,037 | 1,829 | 74,866 | II |
| 23 | 08 | 154 | I | LEG | Compliance/NOV Administration | 1.20 | | 235,251 | 427 | 235,678 | IV |
| 24 | 50 | 157 | I | EAC | Compliance/Special Projects | 5.00 | | 730,374 | 18,286 | 748,660 | IV |
| 25 | 08 | 185 | I | LEG | Database Management | 0.20 | | 39,209 | 30,071 | 69,280 | IV |
| 26 | 44 | 175 | I | STA | DB/Computerization | 0.44 | | 66,679 | 1,507 | 68,186 | II,IV,VI |
| 27 | 26 | 357 | I | PRA | GHG Reptg Sys EPA | 0.10 | (0.10) | 15,811 | (15,811) | - | V |
| 28 | 50 | 365 | I | EAC | Hearing Bd/Variations | 1.50 | | 219,112 | 5,486 | 224,598 | VII |
| 29 | 17 | 364 | I | CB | Hearing Board/Abatement Orders | 0.10 | | 19,265 | 276 | 19,541 | IV |
| 30 | 08 | 366 | I | LEG | Hearing Board/Legal | 2.80 | | 548,919 | 997 | 549,916 | IV |
| 31 | 17 | 365 | I | CB | Hearing Board/Variations/Appeal | 3.20 | | 641,889 | 8,824 | 650,713 | IV,V,VII |
| 32 | 50 | 375 | I | EAC | Inspections | 79.20 | | 11,569,125 | 289,653 | 11,858,778 | IV,V,XV |
| 33 | 50 | 377 | I | EAC | Inspections/RECLAIM Audits | 23.80 | | 3,476,581 | 87,042 | 3,563,623 | II,IV |
| 34 | 08 | 380 | I | LEG | Interagency Coordination | 0.25 | | 49,011 | 89 | 49,100 | II,V |
| 35 | 08 | 402 | III | LEG | Legal Advice/Legislation | 0.25 | (0.15) | 49,011 | (29,371) | 19,640 | 1a |
| 36 | 08 | 403 | III | LEG | Legal Rep/Litigation | 3.60 | (0.10) | 895,253 | (18,358) | 876,895 | 1a,II |
| 37 | 44 | 450 | I | STA | Microscopic Analysis | 3.00 | | 454,629 | 10,274 | 464,903 | VI |
| 38 | 08 | 465 | I | LEG | Mutual Settlement | 3.00 | | 588,128 | 1,068 | 589,196 | IV |
| 39 | 50 | 156 | I | EAC | Perm Proc/Info to Compliance | 3.00 | | 438,224 | 10,972 | 449,196 | II,IV |
| 40 | 44 | 500 | I | STA | PM2.5 Program | 4.80 | 6.50 | 787,406 | 963,728 | 1,751,134 | II,V,IX |
| 41 | 50 | 538 | I | EAC | Port Comm AQ Enforcement | 0.50 | | 73,037 | 1,829 | 74,866 | IX |
| 42 | 50 | 542 | I | EAC | Prop 1B: Goods Movement | 0.30 | | 43,822 | 1,097 | 44,920 | IX |
| 43 | 50 | 550 | II | EAC | Public Complaints/Breakdowns | 10.00 | | 1,460,748 | 36,572 | 1,497,321 | II,IV,V,XV |

**Ensure Compliance with Clean Air Rules
Work Program by Category**

| # | Program Code | Goal | Office | Program | Activities | FTEs | | Cost | | Revenue Categories | | | |
|--------------|--------------|------|--------|---------|--------------------------------|---|--------|------------|--------------|--------------------|--------------|---------------|------------|
| | | | | | | FY 2013-14 | +/- | FY 2014-15 | +/- | | FY 2013-14 | +/- | FY 2014-15 |
| 44 | 50 | 605 | I | EAC | RECLAIM/Admin Support | Admin/Policy/Guidelines | 10.00 | 10.00 | \$ 1,460,748 | \$ 36,572 | \$ 1,497,321 | II,III,IV | |
| 45 | 26 | 620 | I | PRA | Refinery Pilot Project | Refinery Pilot Project | 0.25 | 0.25 | 39,528 | 832 | 40,360 | II | |
| 46 | 26 | 645 | I | PRA | Rule 1610 Plan Verification | Rule 1610 Plan Verification | 0.50 | 0.50 | 79,056 | 1,665 | 80,720 | VI,X | |
| 47 | 50 | 678 | I | EAC | School Siting | Identify Haz. Emission Sources near Schools | 1.00 | 1.00 | 146,075 | 3,657 | 149,732 | II | |
| 48 | 50 | 680 | I | EAC | Small Business Assistance | Asst sm bus w/ Permit Process | 0.50 | 0.50 | 73,037 | 1,829 | 74,866 | IV | |
| 49 | 44 | 700 | I | STA | Source Testing/Compliance | Conduct ST/Prov Data/Compl | 2.25 | 2.25 | 360,971 | 17,706 | 378,677 | VI | |
| 50 | 26 | 716 | I | PRA | Spec Monitoring/R403 | Rule 403 Compliance Monitoring | 0.75 | 0.25 | 118,583 | 42,857 | 161,441 | IV,IX,XV | |
| 51 | 44 | 716 | I | STA | Special Monitoring | Rule 403 Compliance Monitoring | 2.20 | 2.20 | 383,394 | (7,466) | 375,929 | IV,IX,XV | |
| 52 | 44 | 704 | I | STA | ST/Sample Analysis/Compliance | Analyze ST Samples/Compliance | 4.00 | 4.00 | 606,172 | 13,699 | 619,870 | VI | |
| 53 | 50 | 751 | I | EAC | Title III Inspections | Title III Comp/Insp/Follow Up | 0.50 | 0.50 | 73,037 | 1,829 | 74,866 | IV | |
| 54 | 08 | 770 | I | LEG | Title V | Leg Advice: Title V Prog/Perm Dev | 0.05 | 0.05 | 9,802 | 18 | 9,820 | II,IV | |
| 55 | 50 | 771 | I | EAC | Title V Inspections | Title V Comp/Inspect/Follow Up | 11.00 | 11.00 | 1,606,823 | 40,230 | 1,647,053 | II,IV | |
| 56 | 04 | 791 | III | FIN | Toxics/AB2588 | AB2588 Toxics HS Fee Collection | 0.15 | 0.15 | 34,583 | 530 | 35,113 | X | |
| 57 | 08 | 791 | I | LEG | Toxics/AB2588 | AB2588 Legal Advice: Plan & Impl | 0.05 | 0.05 | 9,802 | 18 | 9,820 | X | |
| 58 | 26 | 794 | I | PRA | Toxics/AB2588 | AB2588 Core, Tracking, IWS | 7.00 | 1.50 | 1,106,779 | 265,467 | 1,372,247 | X | |
| 59 | 27 | 791 | III | IM | Toxics/AB2588 | AB2588 Database Software Supp | 0.50 | 0.50 | 141,675 | 2,317 | 143,992 | X | |
| 60 | 44 | 794 | I | STA | Toxics/AB2588 | Eval Protocols/Methods/ST | 1.25 | 1.25 | 189,428.60 | 4,281 | 193,710 | X | |
| 61 | 50 | 791 | I | EAC | Toxics/AB2588 | AB2588 Rev Rpts/Risk Redplans | 0.00 | 0.25 | - | 37,433 | 37,433 | X | |
| 62 | 26 | 790 | I | PRA | Toxics/AB2588 Plans/Reports | AB2588 Rev Rpt/Risk Assmt Plan | 0.50 | (0.50) | 79,056 | (79,056) | - | X | |
| 63 | 44 | 795 | I | STA | Toxics/Engineering | R1401 Toxics/HRA Prot/Rpt Eval | 0.05 | 0.05 | 7,577 | 171 | 7,748 | X | |
| 64 | 08 | 805 | III | LEG | Training | Continuing Education/Training | 0.50 | 0.50 | 98,021 | 178 | 98,199 | 1b | |
| 65 | 50 | 850 | I | EAC | VEE Trains | Smoking Trains-Comp/Inspe/FU | 0.50 | 0.50 | 73,037 | 1,829 | 74,866 | IX,XV | |
| 66 | 44 | 707 | I | STA | VOC Sample Analysis/Compliance | VOC Analysis & Rptg/Compliance | 7.00 | 7.00 | 1,092,800 | 28,973 | 1,121,773 | IV,XV | |
| 67 | 17 | 855 | II | CB | Web Tasks | Create/edit/review web content | 0.03 | 0.03 | 5,780 | 83 | 5,862 | 1a | |
| Total | | | | | | | 245.79 | 10.87 | 256.66 | \$ 38,125,604 | \$ 2,469,490 | \$ 40,595,094 | |

**Customer Service and Business Assistance
Work Program by Category**

| # | Program Code | Goal | Office | Program | Activities | FTEs | | Cost | | Revenue Categories | |
|----|--------------|------|--------|---------|---------------------------------|----------------|------------|----------------|------------|--------------------|--------------|
| | | | | | | FY 2013-14 +/- | FY 2014-15 | FY 2013-14 +/- | FY 2014-15 | | |
| 1 | 04 | 002 | III | FIN | AB2766/Mobile Source | 0.10 | 0.10 | \$ 13,055 | \$ 10,353 | \$ 23,409 | IX |
| 2 | 26 | 007 | I | PRA | AB2766/MSRC | 1.10 | 1.10 | 173,922 | 3,662 | 177,585 | IX |
| 3 | 50 | 038 | I | EAC | Admin/Office Management | 4.00 | 4.00 | 584,299 | 14,629 | 598,928 | 1b |
| 4 | 50 | 047 | I | EAC | Admin/Operations Support | 5.00 | 5.00 | 735,374 | 18,286 | 753,660 | 1b |
| 5 | 35 | 046 | III | LPA | Admin/Prog Mgmt | 3.02 | 3.02 | 464,317 | 6,197 | 470,515 | 1b |
| 6 | 26 | 216 | I | PRA | AER Public Assistance | 0.15 | 1.85 | 23,717 | 299,165 | 322,882 | II |
| 7 | 04 | 170 | I | FIN | Billing Services | 8.00 | 8.00 | 1,054,418 | 33,268 | 1,087,685 | II,III,IV |
| 8 | 04 | 631 | III | FIN | Cash Mgmt/Refunds | 0.30 | 0.30 | 39,166 | 1,060 | 40,226 | III,IV,XI |
| 9 | 35 | 126 | II | LPA | Clean Air Connections | 1.00 | 1.00 | 153,747 | 2,052 | 155,800 | II,IX |
| 10 | 50 | 200 | I | EAC | Economic Dev/Bus Retention | 0.10 | 0.10 | 14,607 | 366 | 14,973 | III |
| 11 | 35 | 205 | II | LPA | Environmental Education | 0.25 | 0.25 | 38,437 | 513 | 38,950 | II,IX,XV |
| 12 | 35 | 240 | I | LPA | Environmental Justice | 2.00 | 2.00 | 307,495 | 4,104 | 311,599 | II,IV |
| 13 | 04 | 260 | III | FIN | Fee Review | 0.10 | 0.10 | 13,055 | 353 | 13,409 | II,III,IV,XV |
| 14 | 35 | 260 | III | LPA | Fee Review | 0.50 | 0.50 | 76,874 | 1,026 | 77,900 | II,III,IV,XV |
| 15 | 50 | 260 | III | EAC | Fee Review | 0.45 | 0.45 | 65,734 | 1,646 | 67,379 | II,III,IV |
| 16 | 04 | 355 | III | FIN | Grants Management | 1.00 | 1.00 | 130,552 | 3,533 | 134,086 | IV,V |
| 17 | 35 | 381 | III | LPA | Interagency Liaison | 0.15 | 0.15 | 23,062 | 308 | 23,370 | 1a,XV |
| 18 | 35 | 390 | I | LPA | Intergov/Geographic Deployment | 9.50 | 9.50 | 1,498,601 | 19,495 | 1,518,096 | II,IX |
| 19 | 08 | 404 | I | LEG | Legal Rep/Legislation | 0.05 | 0.05 | 9,802 | 18 | 9,820 | II,IX |
| 20 | 50 | 425 | I | EAC | Lobby Permit Services | 1.00 | 1.00 | 146,075 | 3,657 | 149,732 | III |
| 21 | 03 | 390 | I | EO | Local Govt Policy Development | 0.05 | 0.05 | 11,471 | 19 | 11,490 | 1a |
| 22 | 27 | 481 | III | IM | New System Development | 1.75 | 1.75 | 582,063 | 158,111 | 740,173 | 1a,III |
| 23 | 03 | 490 | II | EO | Outreach | 1.00 | 1.00 | 229,426 | 381 | 229,807 | 1a |
| 24 | 35 | 491 | II | LPA | Outreach/Business | 1.00 | 1.00 | 153,747 | 14,652 | 168,400 | II,IV |
| 25 | 35 | 496 | II | LPA | Outreach/Visiting Dignitary | 0.25 | 0.25 | 38,437 | 513 | 38,950 | 1a |
| 26 | 50 | 520 | I | EAC | Perm Proc/Pre-App'l Mtg Outreac | 4.00 | 4.00 | 584,299 | 14,629 | 598,928 | III |
| 27 | 35 | 514 | I | LPA | Permit: Expired Permit Program | 0.30 | 0.30 | 46,124 | 616 | 46,740 | IV |
| 28 | 16 | 540 | III | AHR | Print Shop | 4.00 | 4.00 | 679,147 | 14,726 | 693,873 | 1a |
| 29 | 35 | 555 | II | LPA | Public Education/Public Events | 1.00 | 1.00 | 313,747 | 2,052 | 315,800 | II,IX,XV |
| 30 | 35 | 555 | II | LPA | Public Information Center | 1.00 | 1.00 | 243,747 | 2,052 | 245,800 | II,IX |
| 31 | 03 | 565 | III | EO | Public Records Act | 0.05 | 0.05 | 11,471 | 19 | 11,490 | 1a |
| 32 | 04 | 565 | I | FIN | Public Records Act | 0.02 | 0.02 | 2,611 | 71 | 2,682 | 1a |
| 33 | 08 | 565 | III | LEG | Public Records Act | 0.50 | 0.50 | 98,021 | 178 | 98,199 | 1a |
| 34 | 16 | 565 | III | AHR | Public Records Act | 0.20 | (0.15) | 33,407 | (24,871) | 8,536 | 1a |
| 35 | 17 | 565 | III | CB | Public Records Act | 0.02 | 0.02 | 3,853 | 55 | 3,908 | 1a |
| 36 | 26 | 565 | III | PRA | Public Records Act | 0.05 | 0.48 | 7,906 | 77,658 | 85,564 | 1a |
| 37 | 27 | 565 | III | IM | Public Records Act | 3.75 | 3.75 | 645,563 | 17,380 | 662,943 | 1a |
| 38 | 35 | 565 | III | LPA | Public Records Act | 0.10 | 0.10 | 15,375 | 205 | 15,580 | 1a |
| 39 | 44 | 565 | III | STA | Public Records Act | 0.17 | 0.17 | 25,762 | 582 | 26,344 | 1a |
| 40 | 50 | 565 | III | EAC | Public Records Act | 0.50 | 0.50 | 73,037 | 1,829 | 74,866 | 1a |
| 41 | 26 | 833 | III | PRA | Rule 2202 ETC Training | 1.30 | 1.30 | 205,545 | 4,328 | 209,873 | XI |
| 42 | 35 | 679 | III | LPA | Small Business Assistance | 1.00 | 1.00 | 153,747 | 2,052 | 155,800 | III |
| 43 | 08 | 681 | III | LEG | Small Business/Legal Advice | 0.10 | (0.05) | 19,604 | (9,784) | 9,820 | II,III |

| Customer Service and Business Assistance Work Program by Category | | | | | | | | | | | |
|--|--------------|------|--------|---------|-------------------------------|------------|------------|---------------|------------|--------------------|-------------|
| # | Program Code | Goal | Office | Program | Activities | FTEs +/- | | Cost +/- | | Revenue Categories | |
| | | | | | | FY 2013-14 | FY 2014-15 | FY 2013-14 | FY 2014-15 | FY 2013-14 | FY 2014-15 |
| 44 | 50 | 690 | I | EAC | Source Education | 2.80 | 2.80 | \$ 409,009 | \$ 419,250 | | III,IV,V,XV |
| 45 | 44 | 701 | I | STA | Source Testing/Customer Svc | 0.05 | 0.05 | 7,577 | 7,748 | | VI |
| 46 | 35 | 710 | I | LPA | Speakers Bureau | 0.10 | 0.10 | 15,375 | 205 | 15,580 | 1a |
| 47 | 16 | 720 | I | AHR | Subscription Services | 1.70 | 1.70 | 283,963 | 6,259 | 290,221 | IV |
| 48 | 35 | 791 | I | LPA | Toxics/AB2588 | 0.01 | 0.01 | 1,537 | 21 | 1,558 | X |
| 49 | 44 | 709 | I | STA | VOC Sample Analysis/SBA/Other | 0.50 | 0.50 | 75,771 | 1,712 | 77,484 | VI |
| Total | | | | | | 65.04 | 2.13 | \$ 10,537,656 | \$ 719,754 | \$ 11,257,410 | |

A prorated share of the District General budget has been allocated to each line in the workplan based on the number of FTEs reflected on the line.

**Develop Programs to Achieve Clean Air
Work Program by Category**

| # | Program Code | Goal | Office | Program | Activities | FTEs | | Cost | | Revenue Categories | | | |
|--------------|--------------|------|--------|---------|--------------------------------|---|----------------|----------------|----------------|--------------------|--------------|--------------|--|
| | | | | | | FY 2013-14 +/- | FY 2014-15 +/- | FY 2013-14 +/- | FY 2014-15 +/- | | | | |
| 1 | 04 | 009 | I | FIN | AB 1318 Mitigation | AB 1318 Projects Adm/Impl | 0.13 | 0.13 | \$ 16,972 | \$ 459 | \$ 17,431 | XVII | |
| 2 | 08 | 009 | I | LEG | AB 1318 Mitigation | AB 1318 Projects Adm/Impl | 0.05 | 0.05 | 9,802 | 18 | 9,820 | XVII | |
| 3 | 26 | 009 | I | PRA | AB 1318 Mitigation | AB 1318 Projects Adm/Impl | 0.50 | (0.50) | 79,056 | (79,056) | - | XVII | |
| 4 | 44 | 009 | I | STA | AB 1318 Mitigation | AB 1318 Projects Adm/Impl | 0.75 | 0.75 | 113,657 | 2,569 | 116,226 | XVII | |
| 5 | 26 | 002 | I | PRA | AB2766/Mobile Source | AB2766 Mobile Source Outreach | 0.89 | 0.89 | 140,719 | 2,963 | 143,682 | IX | |
| 6 | 26 | 038 | I | PRA | Admin/Office Management | Coordinate Off/Admin Activities | 0.50 | 0.50 | 79,056 | 1,665 | 80,720 | 1b | |
| 7 | 26 | 049 | I | PRA | Admin/Prog Mgmt/AQMP | Admin: AQMP Development | 0.75 | 0.75 | 118,583 | 2,497 | 121,081 | 1b | |
| 8 | 03 | 028 | I | EO | Admin/SCAQMD Policy | Dev/Coord Goals/Policies/Overs | 2.00 | 2.00 | 508,853 | 762 | 509,614 | 1a | |
| 9 | 26 | 057 | I | PRA | Admin/Transportation Prog Mgmt | Admin: Transportation Programs | 0.86 | 0.86 | 135,976 | 2,863 | 138,839 | 1b | |
| 10 | 44 | 069 | I | STA | AQIP Evaluation | AQIP Contract Admin/Evaluation | 0.65 | 0.65 | 98,503 | 2,226 | 100,729 | IX | |
| 11 | 03 | 010 | I | EO | AQMP | Develop/Implement AQMP | 0.05 | 0.05 | 11,471 | 19 | 11,490 | II,IX | |
| 12 | 08 | 010 | I | LEG | AQMP | AQMP Revision/CEQA Review | 0.10 | 0.10 | 19,604 | 19,675 | 39,280 | IV,IX | |
| 13 | 26 | 010 | I | PRA | AQMP | AQMP Special Studies | 2.00 | 2.00 | 321,223 | 6,659 | 327,882 | IV,IX,XV | |
| 14 | 26 | 218 | I | PRA | AQMP/Emissions Inventory | Dev Emiss Inv: Forecasts/RFPs | 2.25 | 2.45 | 355,750 | 39,779 | 395,530 | II,IX | |
| 15 | 26 | 102 | II | PRA | CEQA Document Projects | Review/Prepare CEQA Comments | 3.40 | 3.35 | 537,578 | 67,824 | 605,403 | II,IX | |
| 16 | 26 | 104 | I | PRA | CEQA Policy Development | ID/Develop/impl CEQA Policy | 1.10 | (0.60) | 183,922 | (93,202) | 90,720 | IV,IX | |
| 17 | 26 | 103 | II | PRA | CEQA Special Projects | Contracted by Lead Agency | 0.40 | (0.40) | 63,245 | (63,245) | - | XVII | |
| 18 | 26 | 128 | I | PRA | Cln Communities Pln | Cln Communities Plan Adm/Impl | 1.50 | (1.00) | 237,167 | (156,447) | 80,720 | II,IX | |
| 19 | 26 | 600 | I | PRA | Credit Generation Programs | Dev RFP/AQMP Ctrl Strats/Inter | 1.25 | 1.25 | 197,639 | 4,162 | 201,801 | II,IX | |
| 20 | 26 | 219 | I | PRA | Emissions Field Audit | Emissions Field Audit | 2.00 | (1.50) | 316,223 | (235,502) | 80,720 | II | |
| 21 | 26 | 217 | I | PRA | Emissions Inventory Studies | Dev Emiss DB/Dev/Update Emiss | 4.00 | (2.00) | 632,445 | (309,564) | 322,882 | II,IX,XV | |
| 22 | 44 | 396 | I | STA | Lawmower Exchange | Law Mower Admin/Impl/Outreach | 0.30 | 0.30 | 45,463 | 1,027 | 46,490 | XVII | |
| 23 | 26 | 397 | II | PRA | Lead Agency Projects | Prep Envrntm Asmts/Perm Proj | 1.30 | (0.55) | 205,545 | (84,464) | 121,081 | III | |
| 24 | 44 | 451 | I | STA | Mob Src/CARB/EPA Monitoring | CARB/US EPA Mob Src Fuel Policies | 1.50 | 1.50 | 227,314 | 5,137 | 232,451 | IX | |
| 25 | 44 | 452 | I | STA | Mob Src/CEC/US DOE Monitoring | CEC/US DOE Mob Src rulemaking proposals | 1.00 | 1.00 | 151,543 | 3,425 | 154,968 | IX,XVII | |
| 26 | 44 | 458 | I | STA | Mobile Source Strategies | Implement Fleet Rules | 1.00 | 1.00 | 151,543 | 3,425 | 154,968 | VIII | |
| 27 | 44 | 448 | I | STA | Mobile Src Strategies-Off Road | CARB Off-Road Mob Src ctrl strategy for SIP | 1.00 | 1.00 | 151,543 | 3,425 | 154,968 | XVII | |
| 28 | 26 | 463 | I | PRA | Mold Project EPA | Mold Project EPA/Admin Impl | 0.10 | (0.10) | 15,811 | (15,811) | - | V | |
| 29 | 26 | 503 | I | PRA | PM Strategies | PM10 Plan/Analyze/Strategy Dev | 4.00 | 4.00 | 632,445 | 13,318 | 645,763 | II,V,XV | |
| 30 | 26 | 221 | I | PRA | PR2301 ISR Rule Implementation | Mitigate dev growth | 1.02 | 0.48 | 161,274 | 80,888 | 242,161 | II,IX | |
| 31 | 44 | 542 | I | STA | Prop 18:Goods Movement | Prop 18:Goods Movement | 5.70 | 5.70 | 863,794 | 19,521 | 883,315 | IX | |
| 32 | 44 | 544 | II | STA | Prop 18:Low Emiss Sch Bus | Prop 18:Low Emiss Sch Bus | 1.00 | (0.50) | 151,543 | (74,059) | 77,484 | IX | |
| 33 | 35 | 560 | I | LPA | Public Notification | Public notif of rules/hearings | 0.50 | 0.50 | 96,874 | 1,026 | 97,900 | II,IX,IX | |
| 34 | 26 | 745 | I | PRA | Rideshare | Dist Rideshare/Telecommute Prog | 0.65 | 0.65 | 102,772 | 2,164 | 104,936 | IX | |
| 35 | 26 | 834 | I | PRA | Rule 2202 Implement | Rule 2202 Proc/Sub Plans/Tech Eval | 3.07 | 3.07 | 485,402 | 10,221 | 495,623 | XI | |
| 36 | 26 | 836 | I | PRA | Rule 2202 Support | R2202 Supt/CmptrMaint/WebSubmt | 2.73 | 0.07 | 446,644 | 20,390 | 467,034 | V,VI | |
| 37 | 26 | 068 | II | PRA | SCAQMD Projects | Prepare Environmental Assessments | 5.10 | (0.40) | 826,368 | (47,596) | 778,772 | II,IX,IX | |
| 38 | 26 | 685 | I | PRA | Socio-Economic | Apply econ models/Socio-econ | 3.25 | 0.20 | 675,362 | (9,391) | 665,971 | II,IV | |
| 39 | 44 | 702 | I | STA | ST Methods Development | Eval ST Methods/Validate | 0.95 | 0.95 | 143,966 | 3,254 | 147,219 | II | |
| 40 | 44 | 705 | I | STA | ST Sample Analysis/Air Program | Analyze ST Samples/Air Prgrms | 0.25 | 0.25 | 37,886 | 856 | 38,742 | II | |
| 41 | 26 | 816 | I | PRA | Transportation Regional Progs | Dev AQMP Meas/Coord w/Reg Agn | 0.60 | 0.60 | 94,867 | 1,998 | 96,864 | IX | |
| Total | | | | | | | 60.15 | (6.15) | 54.00 | \$ 9,845,401 | \$ (844,120) | \$ 9,001,281 | |

A prorated share of the District General budget has been allocated to each line in the workplan based on the number of FTEs reflected on the line.

**Develop Rules to Achieve Clean Air
Work Program by Category**

| # | Program Code | Goal | Office | Program | Activities | FTEs | | Cost | | Revenue Categories | |
|--------------|--------------|------|--------|------------------------------------|---|------------|--------|--------------|------------|--------------------|------------|
| | | | | | | FY 2013-14 | +/- | FY 2014-15 | +/- | | FY 2013-14 |
| 1 | 44 | 043 | I | STA Admin/Office Mgmt/Rules | Rules: Assign/Manage/Supp | 0.15 | | \$ 22,731 | \$ 514 | \$ 23,245 | 1b |
| 2 | 26 | 050 | I | PRA Admin/Rule Dev/PRA | Admin: Rule Development | 1.00 | | 158,111 | 3,329 | 161,441 | 1b |
| 3 | 26 | 071 | I | PRA Arch Ctg - Admin | Rdev/Aud/DB/TA/SCAQMD/rpts/AER | 1.00 | (0.25) | 158,111 | (37,031) | 121,081 | VIII |
| 4 | 26 | 077 | I | PRA Area Sources/Rulemaking | Dev/Eval/Impl Area Source Prog | 4.00 | | 632,445 | 13,318 | 645,763 | II,IX |
| 5 | 26 | 084 | I | PRA Blk Carbon Study EPA | EPA Blk Carbon Climate Study | 0.00 | 0.20 | - | 32,288 | 32,288 | VXVII |
| 6 | 26 | 165 | I | PRA Conformity | Monitor Transp. Conformity | 0.50 | | 79,056 | 1,665 | 80,720 | V,IX |
| 7 | 03 | 385 | I | EO Credit Generation Programs | Dev/Impl Marketable Permit | 0.02 | | 4,589 | 8 | 4,596 | II |
| 8 | 26 | 385 | I | PRA Criteria Pollutants/Mob SrCs | Dev/Impl Intercredit Trading | 1.00 | (0.25) | 158,111 | (37,031) | 121,081 | IV,IX |
| 9 | 26 | 362 | II | PRA Health Effects | Study Health Effect/Toxicology | 1.80 | | 284,600 | 5,993 | 290,593 | II,III,IX |
| 10 | 44 | 449 | I | STA Mob Src/SCAQMD Rulemaking | Prepare SCAQMD Mob Src rulemaking proposals | 2.00 | | 303,086 | 6,849 | 309,935 | IX |
| 11 | 44 | 456 | I | STA MS & AQMP Control Strategies | AQMP Control Strategies | 0.30 | | 45,463 | 1,027 | 46,490 | VIII |
| 12 | 26 | 655 | I | PRA NSR/Adm Rulemaking | Amend/Develop NSR & Admin Rules | 5.00 | (2.00) | 790,557 | (306,234) | 484,322 | II,IV |
| 13 | 26 | 460 | I | PRA Regional Modeling | Rule Impact/Analyses/Model Dev | 5.25 | 0.20 | 930,084 | 4,768 | 934,852 | II,VI,IX |
| 14 | 50 | 650 | I | EAC Rulemaking | Dev/Amend/Impl Rules | 0.50 | | 73,037 | 1,829 | 74,866 | II,IX |
| 15 | 44 | 653 | I | STA Rulemaking/BACT | Dev/Amend BACT Guidelines | 2.00 | | 303,086 | 6,849 | 309,935 | II |
| 16 | 26 | 654 | I | PRA Rulemaking/NOX | Rulemaking/NOX | 1.00 | 1.00 | 158,111 | 164,770 | 322,882 | II,IV |
| 17 | 08 | 661 | I | LEG Rulemaking/RECLAIM | RECLAIM Legal Adv/Related Iss | 0.10 | (0.05) | 19,604 | (9,784) | 9,820 | II |
| 18 | 26 | 661 | I | PRA Rulemaking/RECLAIM | RECLAIM Amend Rules/Related Iss | 2.00 | 0.20 | 316,223 | 38,947 | 355,170 | II |
| 19 | 44 | 657 | I | STA Rulemaking/Support PRA | Assist PRA w/ Rulemaking | 0.05 | | 7,577 | 171 | 7,748 | II |
| 20 | 50 | 657 | I | EAC Rulemaking/Support PRA | Provide Rule Development Supp | 0.50 | | 73,037 | 1,829 | 74,866 | II |
| 21 | 26 | 659 | I | PRA Rulemaking/Toxics | Develop/Amend Air Toxic Rules | 3.20 | 1.80 | 505,956 | 301,248 | 807,204 | II |
| 22 | 26 | 656 | I | PRA Rulemaking/VOC | Dev/Amend VOC Rules | 6.90 | 0.60 | 1,210,968 | 149,838 | 1,360,806 | II,IV,XV |
| 23 | 03 | 650 | I | EO Rules | Develop & Implement Rules | 0.04 | | 9,177 | 15 | 9,192 | IV,IX |
| 24 | 08 | 651 | I | LEG Rules/Legal Advice | Legal Advice: Rules/Draft Regs | 0.75 | 0.25 | 147,032 | 49,367 | 196,399 | II |
| 25 | 44 | 706 | I | STA ST Sample Analysis/Air Program | Analyze ST Samples/Rules | 0.25 | | 37,886 | 856 | 38,742 | II |
| 26 | 50 | 752 | I | EAC Title III Rulemaking | Title III Dev/Implement Rules | 0.25 | | 36,519 | 914 | 37,433 | II |
| 27 | 50 | 773 | I | EAC Title V & NSR Rulemaking-Supp | Title V Rules Dev/Amend/Impl | 0.25 | | 36,519 | 914 | 37,433 | II |
| 28 | 44 | 708 | I | STA VOC Sample Analysis/Rules | VOC Analysis & Rptg/Rules | 0.25 | | 37,886 | 856 | 38,742 | II,XV |
| Total | | | | | | 40.06 | 1.70 | \$ 6,539,563 | \$ 398,083 | \$ 6,937,646 | |

A prorated share of the District General budget has been allocated to each line in the workplan based on the number of FTEs reflected on the line.

| Monitoring Air Quality Work Program by Category | | | | | | | | | | | | | | |
|--|--------------|------|--------|---------|--------------------------------|------------|--------|------------|-----------|--------------------|------------|----------------|---------------|---------|
| # | Program Code | Goal | Office | Program | Activities | FTEs | | Cost | | Revenue Categories | | | | |
| | | | | | | FY 2013-14 | +/- | FY 2014-15 | +/- | | FY 2013-14 | +/- | FY 2014-15 | |
| 1 | 44 | 038 | I | STA | Admin/Office Mgmt/Monitoring | 0.90 | 0.90 | \$ | 136,389 | \$ | 3,082 | \$ | 139,471 | 1b |
| 2 | 44 | 046 | I | STA | Admin/Program Management | 2.00 | 2.00 | | 315,086 | | 6,849 | | 321,935 | 1b |
| 3 | 44 | 081 | I | STA | Air Filtration EPA | 0.25 | 0.25 | | 37,886 | | 856 | | 38,742 | V |
| 4 | 44 | 082 | I | STA | Air Filtration Other | 0.50 | 0.50 | | 75,771 | | 1,712 | | 77,484 | XVII |
| 5 | 44 | 065 | I | STA | Air Quality Data Management | 1.00 | 1.00 | | 151,543 | | 3,425 | | 154,968 | II,V,IX |
| 6 | 26 | 061 | I | PRA | Air Quality Evaluation | 1.00 | 1.00 | | 158,111 | | 3,329 | | 161,441 | IX |
| 7 | 44 | 063 | I | STA | Ambient Air Analysis | 11.91 | 11.91 | | 1,804,876 | | 40,789 | | 1,845,664 | II,V,IX |
| 8 | 44 | 067 | II | STA | Ambient Lead Monitoring | 0.50 | 0.50 | | 75,771 | | 1,712 | | 77,484 | IV |
| 9 | 44 | 064 | I | STA | Ambient Network | 18.05 | 18.85 | | 2,842,949 | | 185,791 | | 3,028,740 | IV,V,IX |
| 10 | 44 | 073 | I | STA | Arch Ctgs - Other | 2.00 | 2.00 | | 303,086 | | 6,849 | | 309,935 | XVIII |
| 11 | 44 | 084 | I | STA | Blk Carbon Study EPA | 0.00 | 0.20 | | - | | 30,994 | | 30,994 | XVII |
| 12 | 26 | 151 | II | PRA | Community Scale AirToxicsStudy | 0.50 | (0.50) | | 79,056 | | (79,056) | | - | XVII |
| 13 | 44 | 151 | I | STA | Community Scale AirToxicsStudy | 1.00 | (1.00) | | 151,543 | | (151,543) | | - | XVII |
| 14 | 50 | 210 | II | EAC | Emergency Response | 0.25 | 0.25 | | 36518.70 | | 914 | | 37,433 | II,XV |
| 15 | 44 | 240 | I | STA | Environmental Justice | 0.45 | 0.45 | | 68,194 | | 1,541 | | 69,735 | II,IX |
| 16 | 26 | 439 | I | PRA | MATES IV | 0.10 | 0.10 | | 15,811 | | 333 | | 16,144 | II,IX |
| 17 | 44 | 439 | I | STA | MATES IV | 0.50 | (0.50) | | 75,771 | | (75,771) | | - | VIII |
| 18 | 26 | 445 | I | PRA | Meteorology | 2.00 | 0.20 | | 472,223 | | 12,947 | | 485,170 | II,V,IX |
| 19 | 44 | 468 | I | STA | NATTS(Natl Air Tox Trends Sta) | 1.50 | 1.50 | | 227,314 | | 5,137 | | 232,451 | II,V,IX |
| 20 | 44 | 469 | I | STA | Near Roadway Mon | 1.50 | 1.50 | | 227,314 | | 5,137 | | 232,451 | IV,V,IX |
| 21 | 26 | 530 | I | PRA | Photochemical Assessment | 0.25 | 0.25 | | 39,528 | | 832 | | 40,360 | II,V |
| 22 | 44 | 530 | I | STA | Photochemical Assessment | 3.00 | 3.00 | | 454,629 | | 10,274 | | 464,903 | V,IX |
| 23 | 44 | 505 | I | STA | PM Sampling Program (EPA) | 10.60 | 10.60 | | 1,606,355 | | 36,302 | | 1,642,657 | V |
| 24 | 44 | 507 | I | STA | PM Sampling Spec | 0.10 | 0.10 | | 15,154 | | 342 | | 15,497 | V |
| 25 | 44 | 501 | I | STA | PM2.5 Program | 6.00 | (6.00) | | 909,257 | | (909,257) | | - | II,V,IX |
| 26 | 44 | 585 | I | STA | Quality Assurance | 3.00 | 3.00 | | 454,629 | | 10,274 | | 464,903 | II,V,IX |
| 27 | 44 | 663 | I | STA | Salton Sea Monit | 0.25 | 0.25 | | 37885.72 | | 856 | | 38,742 | XVII |
| 28 | 44 | 715 | II | STA | Spec Monitoring/Emerg Response | 0.50 | 0.50 | | 75,771 | | 1,712 | | 77,484 | II |
| 29 | 26 | 789 | I | PRA | Toxic Inventory Development | 1.00 | (1.00) | | 158,111 | | (158,111) | | - | X |
| 30 | 26 | 821 | II | PRA | TraPac Air Filtr Prg | 0.25 | (0.25) | | 39,528 | | (39,528) | | - | XVII |
| 31 | 44 | 821 | II | STA | TraPac Air Filtr Prg | 1.00 | 1.00 | | 151,543 | | 3,425 | | 154,968 | XVII |
| Total | | | | | | 71.86 | (8.05) | | 63.81 | \$ 11,197,603 | | \$ (1,037,849) | \$ 10,159,755 | |

A prorated share of the District General budget has been allocated to each line in the workplan based on the number of FTEs reflected on the line.

**Operational Support
Work Program by Category**

| # | Program Code | Goal | Office | Program | Activities | FTEs | | Cost | | Revenue Categories |
|----|--------------|------|--------|------------------------------|-------------------------------------|----------------|----------------|----------------|----------------|----------------------|
| | | | | | | FY 2013-14 +/- | FY 2014-15 +/- | FY 2013-14 +/- | FY 2014-15 +/- | |
| 1 | 04 | III | FIN | Admin/Office Budget | Office Budget/Prep/Impl/Track | 0.05 | 0.05 | \$ 6,528 | \$ 177 | 6,704 1b |
| 2 | 03 | III | EO | Admin/Office Management | Budget/Program Management | 1.00 | 1.00 | 229,426 | 381 | 229,807 1b |
| 3 | 04 | III | FIN | Admin/Office Management | Fin Mgmt/Oversee Activities | 3.00 | 3.00 | 391,657 | 10,600 | 402,257 1b |
| 4 | 08 | III | LEG | Admin/Office Management | Attorney Timekeeping/Perf Eval | 2.75 | 0.75 | 574,117 | 128,278 | 702,395 1b |
| 5 | 16 | III | AHR | Admin/Office Management | Reports/Proj/Budget/Contracts | 2.05 | 2.05 | 347,425 | 7,547 | 354,973 1b |
| 6 | 27 | III | IM | Admin/Office Management | Overall Direction/Coord of IM | 3.00 | 3.00 | 516,450 | 13,904 | 530,354 1b |
| 7 | 44 | I | STA | Admin/Prog Mgmt/Mob Src | Admin: Mobile Source | 1.80 | 1.80 | 272,777 | 6,165 | 278,942 1b |
| 8 | 04 | III | FIN | Admin/SCAQMD Budget | Analyze/Prepare/Impl/Track WP | 2.50 | 2.50 | 326,380 | 8,834 | 335,214 1a |
| 9 | 04 | III | FIN | Admin/SCAQMD Capital Assets | FA Rep/Reconcile/Inv/Acct | 0.70 | 0.70 | 91,387 | 2,473 | 93,860 1a |
| 10 | 04 | III | FIN | Admin/SCAQMD Contracts | Contract Admin/Monitor/Process | 3.20 | 3.20 | 417,767 | 11,307 | 429,074 1a |
| 11 | 17 | III | CB | Admin/SCAQMD/GB/HB Mgmt | Admin Governing/Hearing Brds | 1.25 | 1.25 | 240,816 | 3,447 | 244,263 1a,VII,XV |
| 12 | 08 | III | LEG | Admin/SCAQMD-Legal Research | Legal Research/Staff/Exec Mgmt | 1.25 | 1.25 | 245,053 | 445 | 245,498 1a |
| 13 | 27 | I | IM | Annual Emission Reporting | System Enhancements for GHG | 0.50 | 0.50 | 86,075 | 2,317 | 88,392 II,XVII |
| 14 | 04 | III | FIN | Arch Ctgs - Admin | Cost Analysis/Payments | 0.04 | 0.04 | 5,222 | 141 | 5,363 XVIII |
| 15 | 08 | III | LEG | Arch Ctgs - Admin | Rule Dev/TY/Reinterpretations | 1.40 | 1.40 | 274,460 | 498 | 274,958 XVIII |
| 16 | 27 | I | IM | Arch Ctgs - Admin | Database Dev/Maintenance | 0.25 | 0.25 | 43,038 | 1,159 | 44,196 XVIII |
| 17 | 04 | III | FIN | Building Corporation | Building Corp Acct/Fin Reports | 0.02 | 0.02 | 2,611 | 71 | 2,682 1a |
| 18 | 16 | III | AHR | Building Maintenance | Repairs & Preventative Maint | 7.00 | 7.00 | 1,172,507 | 25,771 | 1,198,278 1a |
| 19 | 16 | III | AHR | Business Services | Building Services Admin/Contracts | 2.40 | 2.40 | 400,888 | 8,836 | 409,724 1a |
| 20 | 04 | III | FIN | Cash Mgmt/Revenue Receiving | Receive/Post Pymts/Reconcile | 5.25 | 5.25 | 685,399 | 18,551 | 703,950 II,III,IV,XI |
| 21 | 08 | III | LEG | CEQA Document Projects | CEQA Review | 1.00 | 1.00 | 147,032 | 49,367 | 196,399 II,III,X |
| 22 | 16 | III | AHR | Classification & Pay | Class & Salary Studies | 0.30 | 0.30 | 80,111 | 1,104 | 81,215 1a |
| 23 | 27 | III | IM | Computer Operations | Oper/Manage Host Computer Sys | 5.25 | 5.25 | 1,219,138 | 53,832 | 1,272,970 1a |
| 24 | 27 | III | IM | Database Information Support | Ad Hoc Reports/Bulk Data Update | 1.00 | 1.00 | 192,150 | 4,635 | 196,785 1a |
| 25 | 27 | III | IM | Database Management | Dev/Maintain Central Database | 2.25 | 2.25 | 387,338 | 10,428 | 397,766 1a |
| 26 | 16 | III | AHR | Employee Benefits | Benefits Analysis/Orient/Records | 1.40 | 1.40 | 233,851 | 5,154 | 239,006 1a |
| 27 | 04 | III | FIN | Employee Relations | Assist HR/Interpret Salary Res | 0.10 | 0.10 | 13,055 | 353 | 13,409 1a |
| 28 | 16 | III | AHR | Employee Relations | Meet/Confer/Labor-Mgmt/Grievance | 2.70 | 2.70 | 450,999 | 9,940 | 460,939 1a |
| 29 | 08 | III | LEG | Employee/Employment Law | Legal Advice: Employment Law | 1.00 | 1.00 | 196,043 | 356 | 196,399 1a |
| 30 | 16 | III | AHR | Equal Employment Opportunity | Program Dev/Monitor/Reporting | 0.10 | 0.10 | 16,704 | 368 | 17,072 1a |
| 31 | 16 | III | AHR | Facilities Services | Phones/Space/Keys/Audio-Visual | 1.00 | 1.00 | 169,037 | 3,682 | 172,718 1a |
| 32 | 04 | III | FIN | Financial Mgmt/Accounting | Record Accts Rec & Pay/Rpts | 6.20 | 6.20 | 849,424 | 21,908 | 871,331 1a |
| 33 | 04 | III | FIN | Financial Mgmt/Fin Analysis | Fin/SCAQMD Stat Analysis & Audit | 0.80 | 0.80 | 104,442 | 2,827 | 107,269 1a |
| 34 | 04 | III | FIN | Financial Mgmt/Treasury Mgmt | Treas Mgt Anlyz/Trk/Proj/Invst | 0.90 | 0.90 | 219,497 | (15,320) | 204,177 1a |
| 35 | 04 | III | FIN | Financial Systems | CLASS/Rev/Acct/PR/Sys Analyze | 0.10 | 0.10 | 13,055 | 353 | 13,409 1a |
| 36 | 02 | III | GB | Governing Board | Rep of Dist Meet/Conf/Testimony | 0.00 | 0.00 | 1,325,858 | 55,359 | 1,381,217 1a |
| 37 | 08 | III | LEG | Governing Board | Legal Advice:Attend Board/Cmte Mtgs | 1.00 | 1.00 | 196,043 | 356 | 196,399 1a |
| 38 | 17 | III | CB | Governing Board | Attend/Record/Monitor Meetings | 1.40 | 1.40 | 269,714 | 3,861 | 273,575 1a |
| 39 | 35 | III | LPA | Graphic Arts | Graphic Arts | 2.00 | 2.00 | 307,495 | 4,104 | 311,599 1a |
| 40 | 27 | III | IM | Information Technology Svcs | Enhance Oper Effic/Productivity | 2.75 | 2.75 | 505,763 | 13,145 | 518,908 1a |
| 41 | 26 | III | PRA | Lead Agency Projects | Rep Employees in Grievance Act | 0.01 | 0.01 | 1,581 | 33 | 1,614 1a |
| 42 | 08 | III | LEG | Legal Advice/SCAQMD Programs | General Advice: Contracts | 2.50 | 2.00 | 550,107 | (97,309) | 452,797 1a |
| 43 | 27 | III | IM | Library | General Library Svcs/Archives | 0.25 | 0.25 | 51,388 | 1,159 | 52,546 1a |

**Operational Support
Work Program by Category**

| # | Program Code | Goal | Office | Program | Activities | FTEs | | Cost | | Revenue Categories | | |
|----|--------------|------|--------|--------------------------------|-------------------------------------|------------|------|------------|-----------|--------------------|------------|-----------|
| | | | | | | FY 2013-14 | +/- | FY 2014-15 | +/- | | FY 2013-14 | +/- |
| 44 | 04 | 447 | FIN | Mobile Sources/Accounting | Record Acct Rec & Pay/Special Funds | 0.65 | | 0.65 | \$ 84,859 | \$ 2,297 | \$ 87,156 | IX |
| 45 | 27 | 470 | IM | Network Operations/Telecomm | Operate/Maintain/Implem SCAQMD | 9.25 | | 9.25 | 1,888,584 | 12,151 | 1,900,735 | 1a |
| 46 | 27 | 480 | IM | New System Development | Dev sys for special loper needs | 3.00 | | 3.00 | 583,646 | 13,904 | 597,550 | II,IV |
| 47 | 04 | 493 | II | Outreach/SB/MB/DVBE | Outreach/Incr SB/DVBE Partic | 0.05 | | 0.05 | 6,528 | 177 | 6,704 | 1a |
| 48 | 04 | 510 | FIN | Payroll | Ded/Ret Rpts/PR/ST & Fed Rpts | 3.60 | 1.00 | 4.60 | 514,988 | 145,121 | 660,109 | 1a |
| 49 | 16 | 232 | AHR | Position Control | Track Positions/Workforce Anlys | 0.40 | 0.15 | 0.55 | 66,815 | 27,080 | 93,895 | 1a |
| 50 | 04 | 570 | FIN | Purchasing | Purch/Track Svcs & Supplies | 2.50 | | 2.50 | 326,380 | 8,834 | 335,214 | 1a |
| 51 | 04 | 571 | FIN | Purchasing/Receiving | Receive/Record SCAQMD Purchases | 1.20 | | 1.20 | 156,663 | 4,240 | 160,903 | 1a |
| 52 | 04 | 572 | FIN | Purchasing-Receiving/Stockroom | Track/Monitor SCAQMD Supplies | 1.00 | | 1.00 | 130,552 | 3,533 | 134,086 | 1a |
| 53 | 27 | 615 | IM | Records Information Mgmt Plan | Plan/Impl/Dir/Records Mgmt plan | 1.25 | | 1.25 | 258,188 | 5,793 | 263,981 | 1a |
| 54 | 27 | 616 | IM | Records Services | Records/Documents processing | 3.75 | | 3.75 | 780,563 | 17,380 | 797,943 | 1a,III,IV |
| 55 | 16 | 228 | AHR | Recruitment & Selection | Recruit Candidates for SCAQMD | 3.25 | | 3.25 | 566,370 | 11,965 | 578,335 | 1a |
| 56 | 16 | 640 | AHR | Risk Management | Liabl/Property/Wk Comp/Selfins | 1.00 | | 1.00 | 300,037 | 3,682 | 303,718 | 1a |
| 57 | 16 | 026 | AHR | SCAQMD Mail | Posting/Mailing/Delivery | 2.30 | | 2.30 | 384,185 | 8,468 | 392,652 | 1a |
| 58 | 27 | 736 | IM | Systems Implementation/Peoples | Fin/HR Peoplesoft Systems Impl | 1.50 | | 1.50 | 258,225 | 256,952 | 515,177 | 1a |
| 59 | 27 | 735 | IM | Systems Maintenance | Maintain Existing Software Prog | 4.50 | | 4.50 | 1,361,576 | (55,224) | 1,306,352 | II,III,IV |
| 60 | 04 | 805 | FIN | Training | Continuing Education/Training | 0.20 | | 0.20 | 26,110 | 707 | 26,817 | 1b |
| 61 | 26 | 805 | PRA | Training | Training | 0.05 | | 0.05 | 7,906 | 166 | 8,072 | 1b |
| 62 | 50 | 805 | III | EAC | Dist/Org Unit Training | 6.00 | | 6.00 | 876,449 | 21,943 | 898,392 | 1b |
| 63 | 04 | 825 | III | FIN | Union Negotiations | 0.02 | | 0.02 | 2,611 | 71 | 2,682 | 1a |
| 64 | 08 | 825 | III | LEG | Union Negotiations | 0.05 | | 0.05 | 9,802 | 18 | 9,820 | 1a |
| 65 | 26 | 825 | III | PRA | Union Negotiations | 0.01 | | 0.01 | 1,581 | 33 | 1,614 | 1a |
| 66 | 35 | 825 | III | LPA | Union Negotiations | 0.01 | | 0.01 | 1,537 | 21 | 1,558 | 1a |
| 67 | 44 | 825 | III | STA | Union Negotiations | 0.05 | | 0.05 | 7,577 | 171 | 7,748 | 1a |
| 68 | 50 | 825 | III | EAC | Union Negotiations | 0.10 | | 0.10 | 14,607 | 366 | 14,973 | 1a |
| 69 | 04 | 826 | III | FIN | Union Steward Activities | 0.01 | | 0.01 | 1,306 | 35 | 1,341 | 1a |
| 70 | 08 | 826 | III | LEG | Union Steward Activities | 0.05 | | 0.05 | 9,802 | 18 | 9,820 | 1a |
| 71 | 35 | 826 | III | LPA | Union Steward Activities | 0.01 | | 0.01 | 1,537 | 21 | 1,558 | 1a |
| 72 | 44 | 826 | III | STA | Union Steward Activities | 0.05 | | 0.05 | 7,577 | 171 | 7,748 | 1a |
| 73 | 50 | 826 | III | EAC | Union Steward Activities | 0.10 | | 0.10 | 14,607 | 366 | 14,973 | 1a |
| 74 | 03 | 855 | II | EO | Web Tasks | 0.03 | | 0.03 | 6,883 | 11 | 6,894 | 1a |
| 75 | 04 | 855 | II | FIN | Web Tasks | 0.02 | | 0.02 | 2,611 | 71 | 2,682 | 1a |
| 76 | 20 | 855 | II | MO | Web Tasks | 0.04 | | 0.04 | 6,282 | (227) | 6,055 | 1a |
| 77 | 26 | 855 | II | PRA | Web Tasks | 0.10 | | 0.10 | 15,811 | 333 | 16,144 | 1a |
| 78 | 27 | 855 | II | IM | Web Tasks | 3.25 | | 3.25 | 590,488 | 15,563 | 606,051 | 1a |
| 79 | 35 | 855 | II | LPA | Web Tasks | 0.40 | | 0.40 | 61,499 | 821 | 62,320 | 1a |
| 80 | 50 | 855 | II | EAC | Web Tasks | 0.50 | | 0.50 | 73,037 | 1,829 | 74,866 | 1a |

| | | | | | | |
|--------------|--------|------|--------|---------------|------------|---------------|
| Total | 123.42 | 1.65 | 125.07 | \$ 23,237,586 | \$ 889,458 | \$ 24,127,044 |
|--------------|--------|------|--------|---------------|------------|---------------|

**Timely Review of Permits
Work Program by Category**

| # | Program Code | Goal | Office | Program | Activities | FTEs | | Cost | | Revenue Categories | | | |
|--------------|--------------|------|--------|---------|---------------------------------|---------------------------------------|------------|------------|----------------|--------------------|------------|----------------|--|
| | | | | | | FY 2013-14 +/- | FY 2014-15 | FY 2013-14 | FY 2014-15 +/- | | | | |
| 1 | 26 | 040 | I | PRA | Admin/Office Mgmt/AQ Impl | Admin/Modeling/New Legis/Sm Sr | 0.42 | 0.42 | \$ 66,407 | \$ 1,398 | 67,805 | 1b | |
| 2 | 26 | 044 | I | PRA | Admin/Office Mgmt/Permit & Fee | Admin: Resolve Perm/Fee Issues | 0.10 | 0.10 | 15,811 | 333 | 16,144 | 1b | |
| 3 | 26 | 120 | I | PRA | Certification/Registration Pro | Certification/Registration Prog | 1.80 | 1.80 | 284,600 | 5,993 | 290,593 | III | |
| 4 | 50 | 253 | I | EAC | ERC Appl Processing | Process ERC Applications | 3.50 | 3.50 | 511,262 | 12,800 | 524,062 | III | |
| 5 | 50 | 367 | I | EAC | Hearing Board/Appeals | Appeals: Permits & Denials | 0.50 | 0.50 | 73,037 | 1,829 | 74,866 | III | |
| 6 | 50 | 476 | I | EAC | NSR Data Clean Up | Edit/Update NSR Data | 0.50 | 0.50 | 73,037 | 1,829 | 74,866 | II | |
| 7 | 50 | 475 | I | EAC | NSR Implementation | Implement NSR/AI locate ERCs | 2.50 | 2.50 | 365,187 | 9,143 | 374,330 | I,III,V | |
| 8 | 50 | 521 | I | EAC | Perm Proc/Expedited Permit | Proc Expedited Permits (301OT) | 0.50 | 0.50 | 73,037 | 1,829 | 74,866 | III | |
| 9 | 50 | 728 | I | EAC | Perm Proc/IM Programming | Assist IM: Design/Review/Test | 2.00 | 2.00 | 292,150 | 7,314 | 299,464 | II,II,IV | |
| 10 | 50 | 515 | I | EAC | Perm Proc/Non TV/Non RECLAIM | PP: Non Title V/Title III/RECLAIM | 55.30 | 55.30 | 8,187,937 | 192,245 | 8,380,182 | III | |
| 11 | 50 | 519 | I | EAC | Perm Proc/Title III (Non TV) | Process Title III Permits | 1.00 | 1.00 | 146,075 | 3,657 | 149,732 | III | |
| 12 | 26 | 461 | I | PRA | Permit & CEQA Modeling Review | Review Model Permit/Risk Assmnt | 1.50 | 1.50 | 257,167 | 4,994 | 262,161 | III | |
| 13 | 08 | 516 | I | LEG | Permit Processing/Legal | Legal Advice: Permit Processing | 0.25 | 0.15 | 49,011 | (19,551) | 29,460 | III | |
| 14 | 44 | 725 | I | STA | Permit Processing/Support EAC | Assist EAC w/ Permit Process | 0.05 | 0.05 | 7,577 | 171 | 7,748 | III | |
| 15 | 50 | 517 | I | EAC | Permit Services | Facility Data-Create/Edit | 12.50 | 12.50 | 1,825,935 | 45,715 | 1,871,651 | III | |
| 16 | 27 | 523 | III | IM | Permit Streamlining | Permit Streamlining | 0.25 | 0.25 | 43,038 | 1,159 | 44,196 | III | |
| 17 | 50 | 523 | I | EAC | Permit Streamlining | Permit Streamlining | 3.75 | 3.75 | 547,781 | 13,715 | 561,495 | III | |
| 18 | 44 | 545 | I | STA | Protocols/Reports/Plans | Eval Test Protocols/Cust Svc | 0.10 | 0.10 | 15,154 | 342 | 15,497 | III,IV | |
| 19 | 44 | 546 | I | STA | Protocols/Reports/Plans | Eval Test Protocols/Compliance | 6.15 | 6.15 | 931,989 | 21,062 | 953,051 | IV,VI | |
| 20 | 50 | 607 | I | EAC | RECLAIM & Title V | Process RECLAIM & TV Permits | 12.65 | 12.40 | 1,847,846 | 8,831 | 1,856,677 | III | |
| 21 | 50 | 518 | I | EAC | RECLAIM Non-Title V | Process RECLAIM Only Permits | 4.50 | 4.50 | 657,337 | 16,458 | 673,794 | III,IV,XV | |
| 22 | 26 | 643 | I | PRA | Rule 222 Filing Program | Rule 222 Filing Program | 0.20 | 0.20 | 77,622 | 4,666 | 82,288 | IV | |
| 23 | 35 | 680 | I | LPA | Small Business/Permit Streamlin | Asst sm bus to comply/SCAQMD req | 3.95 | 3.95 | 607,303 | 8,106 | 615,408 | II,II,IV,IV,XV | |
| 24 | 27 | 770 | I | IM | Title V | Dev/Maintain Title V Program | 1.00 | 1.00 | 172,150 | 4,635 | 176,785 | III | |
| 25 | 50 | 775 | I | EAC | Title V - Admin | Title V Administration | 1.00 | 1.00 | 146,075 | 3,657 | 149,732 | III | |
| 26 | 08 | 772 | I | LEG | Title V Permits | Leg Advice: New Source Title V Permit | 0.10 | 0.05 | 19,604 | (9,784) | 9,820 | III | |
| 27 | 50 | 774 | I | EAC | TV/Non-RECLAIM | Process Title V Only Permits | 18.00 | 18.00 | 2,629,347 | 65,830 | 2,695,177 | III | |
| Total | | | | | | | 134.07 | (0.40) | 133.67 | \$ 19,923,476 | \$ 408,377 | \$ 20,331,852 | |

A prorated share of the District General budget has been allocated to each line in the workplan based on the number of FTEs reflected on the line.

| Policy Support Work Program by Category | | | | | | | | | |
|--|------|--------|---------------------------------|---|------------|------------|----------------|--------------|--------------------|
| Program Code | Goal | Office | Program | Activities | FY 2013-14 | FY 2014-15 | FY 2013-14 | FY 2014-15 | Revenue Categories |
| # | | | | | +/- | +/- | Cost | Cost | |
| 144 | 041 | STA | Admin/Office Mgmt/Policy Supp | Overall Policy Supp/Mgmt/Coord | 0.49 | 0.49 | \$ 174,256 | \$ 1,678 | 1b |
| 226 | 048 | PRA | Admin/Prog Mgmt/Policy | Admin: GB/Committee Support | 1.00 | 1.00 | 158,111 | 3,329 | 1b, 11,441 |
| 326 | 277 | PRA | Advisory Group/AQMP | Governing Board AQMP Advisory Group | 0.05 | 0.05 | 7,906 | 166 | 8,072 |
| 435 | 280 | LPA | Advisory Group/Ethnic Comm | GB Ethnic Comm Advisory Group | 0.40 | 0.40 | 61,499 | 821 | 62,320 |
| 503 | 276 | EO | Advisory Group/Governing Board | Governing Board Advisory Group | 0.05 | 0.05 | 11,471 | 19 | 11,490 |
| 626 | 276 | PRA | Advisory Group/Home Rule | Governing Board Advisory Group | 0.30 | 0.30 | 47,433 | 999 | 48,432 |
| 726 | 278 | PRA | Advisory Group/Sci, Tech/Model | Scientific/Tech/Model Peer Rev | 0.05 | 0.05 | 7,906 | 166 | 8,072 |
| 835 | 281 | LPA | Advisory Group/Small Business | SBA Advisory Group Staff Support | 0.50 | 0.50 | 76,874 | 1,026 | 77,900 |
| 944 | 276 | STA | Advisory Group/Technology Adva | Tech Adv Advisory Group Supp | 0.10 | 0.10 | 15,154 | 342 | 15,497 |
| 1003 | 078 | EO | Asthma & Outdoor AQ Consortium | Asthma & Outdoor AQ Consortium | 0.01 | 0.01 | 2,294 | 4 | 2,298 |
| 1150 | 276 | EAC | Board Committees | Admin/Stationary Source Committees | 0.25 | 0.25 | 36,519 | 914 | 37,433 |
| 1206 | 083 | EO | Brain Tumor & Air Poll Fdn | Brain Tumor & Air Poll Foundation Support | 0.10 | 0.10 | 15,811 | 333 | 16,144 |
| 1303 | 083 | EO | Brain Tumor & Air Poll Foundat | Brain Tumor & Air Poll Foundation Support | 0.03 | 0.03 | 6,883 | 11 | 6,894 |
| 1404 | 083 | FIN | Brain Tumor & Air Poll Foundat | Brain Tumor & Air Poll Foundation Support | 0.02 | 0.02 | 2,611 | 71 | 2,682 |
| 1526 | 148 | PRA | Climate Change | GHG/Climate Change Policy Development | 2.00 | 1.10 | 316,223 | (138,638) | 177,585 |
| 1650 | 148 | EAC | Climate Change | GHG/Climate Change Support | 0.50 | 0.50 | 73,037 | 1,829 | 74,866 |
| 1726 | 240 | PRA | El-AQ Guidance Document | AQ Guidance Document | 0.28 | (0.05) | 44,271 | (7,140) | 37,131 |
| 1835 | 345 | LPA | Goods Mvmt&Financial Incentive | Goods Movement & Financial Incentives Progr | 1.00 | 1.00 | 153,747 | 2,052 | 155,800 |
| 1903 | 275 | EO | Governing Board | Board/Committee Support | 1.60 | 1.60 | 367,082 | 609 | 367,691 |
| 2035 | 283 | LPA | Governing Board Policy | Brd sup/Respond to GB req | 0.55 | 0.55 | 84,561 | 1,129 | 85,690 |
| 2103 | 381 | EO | Interagency Liaison | Local/State/Fed Coord/Interact | 0.40 | 0.40 | 91,771 | 152 | 91,923 |
| 2203 | 410 | EO | Legislation | Testimony/Mtgs/New/Current Leg | 0.50 | 0.50 | 114,713 | 190 | 114,904 |
| 2344 | 410 | STA | Legislation | Support Pollution Reduction thru Legislatio | 0.50 | 0.50 | 75,771 | 1,712 | 77,484 |
| 2435 | 413 | LPA | Legislation/Exec Office Support | Coord Legis w/ EO, EC, Mgmt | 0.25 | 0.25 | 38,437 | 513 | 38,950 |
| 2535 | 412 | LPA | Legislation/Federal | Lobbying/Analyses/Tracking/Out | 0.25 | 0.25 | 479,037 | 513 | 479,550 |
| 2635 | 414 | LPA | Legislation-Effects | Lobbying/Analyses/Tracking/Out | 0.80 | 0.80 | 132,998 | 1,642 | 134,640 |
| 2703 | 416 | EO | Legislative Activities | Supp/Promote/Influence Legis/Adm | 0.05 | 0.05 | 11,471 | 19 | 11,490 |
| 2808 | 416 | LEG | Legislative Activities | Lobbying, Supp/Promote/Influence Legis/Adm | 0.10 | 0.10 | 19,604 | 36 | 19,640 |
| 2926 | 416 | PRA | Legislative Activities | Supp/Promote/Influence Legis/Adm | 0.10 | 0.10 | 15,811 | 333 | 16,144 |
| 3035 | 416 | LPA | Legislative Activities | Supp/Promote/Influence Legis/Adm | 0.50 | 0.50 | 441,874 | 1,026 | 442,900 |
| 3150 | 416 | EAC | Legislative Activities | Legislative Activities | 0.25 | 0.25 | 36,519 | 914 | 37,433 |
| 3244 | 454 | STA | Mob Src-Greenhs Gas Reduc Meas | Provide comments on mob src portion of AB32 | 1.39 | 1.39 | 210,645 | 4,760 | 215,405 |
| 3335 | 494 | LPA | Outreach/Collateral Developmen | Edits, Brds, Talk shows, Commercl | 0.60 | 0.60 | 179,364 | 1,231 | 180,596 |
| 3420 | 494 | MO | Outreach/Media | Edits, Brds, Talk shows, Commercl | 2.96 | 2.96 | 490,886 | (13,817) | 477,070 |
| 3503 | 717 | EO | Student Interns | Gov Board/Student Intern Program | 0.02 | 0.02 | 4,589 | 8 | 4,596 |
| 3608 | 717 | LEG | Student Interns | Gov Board/Student Intern Program | 0.30 | 0.20 | 58,813 | (19,533) | 39,280 |
| 3716 | 717 | AHR | Student Interns | Gov Board/Student Intern Program | 0.20 | 0.20 | 33,407 | 736 | 34,144 |
| 3826 | 717 | PRA | Student Interns | Gov Bd/Student Intern Program | 0.01 | 0.01 | 1,581 | 33 | 1,614 |
| 3935 | 717 | LPA | Student Interns | Student Interns | 0.10 | 0.10 | 15,375 | 205 | 15,580 |
| Total | | | | | 18.56 | (1.05) | \$ 4,016,316 | \$ (149,602) | \$ 3,866,713 |
| Total SCAQMD | | | | | 797.00 | 1.00 | \$ 129,202,927 | \$ 3,017,147 | \$ 132,220,074 |

A prorated share of the District General Budget has been allocated to each line in the workplan based on the number of FTEs reflected on the line.

WORK PROGRAM GLOSSARY

Below are descriptions of the activities related to the Work Program.

AB 1318 Mitigation - an eligible electrical generating facility shall pay mitigation fees for the transfer of emission credits from SCAQMD's internal emission credit accounts. Mitigation fees shall be used to finance emission reduction projects, pursuant to the requirements of AB 1318.

AB 2766 (Mobile Sources, MSRC) - programs funded from motor vehicle registration revenues. The activities include evaluation, monitoring, technical assistance, and tracking of AB2766 Subvention Fund Program progress reports including cost-effectiveness and emissions reductions achieved, supporting programs implemented by the Mobile Source Review Committee (MSRC), disbursing and accounting for revenues subvended to local governments, and performing SCAQMD activities related to reduction of emissions from mobile sources.

Acid Rain Program - developing and implementing the Continuous Emissions Monitoring Program in compliance with 40 CFR Part 75 of the Clean Air Act.

Administration/SCAQMD - supporting the administration of the SCAQMD. Examples are tracking fixed assets, operating the mailroom, preparing and reviewing contracts, conducting oversight of SCAQMD activities, developing district-wide policies and procedures, preparing the SCAQMD budget, providing legal advice on SCAQMD programs and other activities, and performing activities in support of the SCAQMD as a whole.

Admin/SCAQMD Capital Assets (Asset Management) – tracking of acquisitions, disposals/retirements and reconciliation of capital assets to capital outlay account, and conducting annual lab and biennial asset inventories.

Administration/Office Management - supporting the administration of an organizational unit or a unit within a division. This includes such items as preparing organizational unit budgets, tracking programs, providing overall direction and coordination of the office, providing program management and integration, preparing policies and procedures manuals, and preparing special studies and projects.

Advisory Group – providing support to various groups such as: AQMP (Air Quality Management Plan), Environmental Justice, Home Rule, Local Government and Small Business Assistance, Technology Advancement, and Permit Streamlining Task Force.

AER (Air Emission Reporting Program) Public Assistance – provides public assistance in implementing SCAQMD's AER program by conducting workshops, resolving fee-related issues, and responding to questions.

Air Filtration - installation of high-efficiency air filtration devices in schools with the goal of reducing children's exposure to particulate matter in the classroom.

WORK PROGRAM GLOSSARY

Air Monitoring (Ambient Air Analysis, Ambient Network, Audit, Data Reporting, Special Monitoring) - monitoring the ambient air in the SCAQMD's jurisdiction. This includes operating the SCAQMD's air monitoring network and localized monitoring at landfill sites as well as conducting specialized monitoring in response to public nuisance situations. Also see Special Monitoring.

Air Quality Evaluation - analyzing air quality trends and preparing the RFP (Reasonable Further Progress) report.

Ambient Air Analysis/Ambient Network (Audit, Data Reporting, Special Monitoring) – complying with Federal regulations to monitor air quality for criteria pollutants at air monitoring stations to determine progress toward meeting the federal ambient air quality standards. This includes operating the SCAQMD's air monitoring network and localized monitoring at landfill sites as well as conducting specialized monitoring in response to public nuisance situations. SCAQMD monitoring stations also collect samples which are analyzed by SCAQMD's laboratory. Also see Special Monitoring.

Annual Emission Reporting (AER) – implementing the AER Program and tracking actual emissions reported by facilities, conducting audits of data, handling refunds, and preparing inventories and various reports.

AQIP Evaluation – provides incentive funding for projects to meet VOC, NO_x, and CO emission targets with funds generated from companies who pay fees in lieu of carpool programs. Projects are funded through a semi-annual solicitation process.

AQMP (Air Quality Management Plan) – Management Plan for the South Coast Air Basin and the Interagency AQMP Implementation Committee.

Architectural Coatings (Admin, End User, Other) – Rule 314 requiring architectural coatings manufacturers which distribute or sell their manufactured architectural coatings into or within the SCAQMD for use in the SCAQMD to submit an Annual Quantity and Emissions Report. To recover the cost of the program, a fee is assessed to these manufacturers. The fee is based on the quantity of coatings as well as the cumulative emissions from the quantity of coatings distributed or sold for use in the SCAQMD.

Area Sources/Compliance – developing rules and compliance programs, as well as alternatives to traditional permitting for smaller sources of emissions of VOC and NO_x.

Asthma and Outdoor Air Quality Consortium – a group composed of researchers from local universities with air pollution and respiratory disease expertise that conducts research projects relating to asthma and air quality.

Auto Services - maintaining the SCAQMD's fleet of automobiles, trucks, and vans as well as providing messenger services as needed.

WORK PROGRAM GLOSSARY

Billing Services - administering the SCAQMD's permit billing system, responding to inquiries and resolving problems related to fees billed.

Board Committees - participation in Governing Board committees by preparing materials, presenting information on significant or new programs and providing technical expertise.

Brain Tumor and Air Pollution Foundation – foundation established to support research on the relationship between air pollution and brain tumors. The demographic, behavioral, and genetic factors in patients with brain tumors in the Los Angeles area being studied to determine any potential impact that air pollution may have on brain tumor incidence.

Building Corporation - managing the South Coast Air Quality Management District Building Corporation. The Building Corporation issued Installment Sale Revenue Bonds in conjunction with the construction of the SCAQMD's Diamond Bar headquarters facility.

Building Maintenance - maintaining and repairing the Diamond Bar Headquarters facility and SCAQMD air monitoring sites.

Business Services – overseeing operation of the Facilities Services, Automotive Services, Print Shop and Mail/Subscriptions Services; negotiating and administering Diamond Bar facility and air monitoring station lease agreements.

California Natural Gas Vehicle Partnership – strategic, non-binding partnership formed to work together in developing and deploying natural gas vehicles and implementing a statewide natural gas infrastructure.

Call Center (Central Operator, CUT-SMOG, Field Support) - operating the 24-hour radio communication system via telephone between SCAQMD headquarters and the public.

CARB PERP (Portable Equipment Registration Program) Program – A program established by CARB allowing the operation of portable equipment in any air district throughout the state without individual local district permits. Amended to enhance enforceability and expand CARB's requirements for portable engines and equipment units, creating a more comprehensive and inclusive statewide registration program that now provides for triennial inspection and renewal of PERP registration.

Carl Moyer Program – provides incentive funding for the repower, replacement, or purchase of new heavy-duty vehicles and equipment beyond the emission limits mandated by regulations. Awards are granted through an annual solicitation process. Separate program announcements are also issued for pre-1990 diesel Class 7 or 8 truck fleet and ports truck fleet modernization programs. Also see Mobile Sources.

WORK PROGRAM GLOSSARY

Case Disposition - resolving Notices of Violation (NOV) issued by SCAQMD inspectors. This includes preparing both civil and criminal cases and administering SCAQMD's Mutual Settlement Letter Program.

Cash Management (Revenue Receiving, Refunds) – receiving revenue, posting of payments, processing of refunds associated with SCAQMD programs, and bank and cash reconciliations.

CEMS Certification (Continuous Emissions Monitoring System) - evaluating, approving, and certifying the continuous emissions monitoring systems installed on emissions sources to ensure compliance with SCAQMD rules and permit conditions.

CEQA Document Projects/Special Projects (California Environmental Quality Act) - reviewing, preparing, assessing, and commenting on projects which have the potential of an air quality impact.

Certification/Registration Program – implementing an alternative, streamlined program for evaluating and certifying individual, standard equipment models submitted by manufacturers and then registering the equipment as they are proposed to be individual users.

Classification and Pay – maintaining the classification plan and conducting job analyses to ensure SCAQMD positions are allocated to the proper class, and conducting compensation studies to ensure classes are appropriately compensated and salaries remain competitive in the workforce.

Clean Air Connections – increase awareness of air quality issues and SCAQMD's programs and goals by developing and nurturing a region-wide group of community members with an interest in air quality issues.

Clean Communities Plan (CCP) – an update to the 2000 Air Toxics Control Plan (ATCP) and the 2004 Addendum. The objective of the 2010 CCP is to reduce the exposure to air toxics and air-related nuisances throughout the district, with emphasis on cumulative impacts.

Clean Fuels Program (Contract Admin, Legal Advice, Mobile Sources, Stationary Combust/Energy, Tech Transfer) – accelerate the development and deployment of advanced, low emission technologies, including, but not limited to plug-in hybrid electric vehicles, low emission heavy-duty engines; after treatment for off-road construction equipment and identification of tailpipe emissions from biofuels.

Climate Change – developing and evaluating policy and strategy related to local, state, federal and international efforts on climate change. Seek to maximize synergies for criteria and toxic reduction and minimize and negative impacts.

WORK PROGRAM GLOSSARY

Compliance (Guidelines, Testing, IM Related Activities, NOV Admin, Special Projects) – ensuring compliance of clean air rules and regulations through regular inspection of equipment and facilities, as well as responding to air quality complaints made by the general public.

Compliance/Notice of Violation (NOV) Administration – NOV processing and review for preparation for assignment to Mutual Settlement Agreement, Civil, or Criminal handling.

Computer Operations - operating and managing the SCAQMD's computer resources. These resources support the SCAQMD's business processes, air quality data, and modeling activities and the air monitoring telemetry system. Also see Systems Maintenance.

Conformity - reviewing of federal guidance and providing input on conformity analysis for the Regional Transportation Improvement Program (RTIP). Staff also participates in various Southern California Association of Governments (SCAG) meetings, the Statewide Conformity Working group, and other meetings to address conformity implementation issues. Staff participates in the federal Conformity Rule revision process, and monitors and updates Rule 1902, Transportation Conformity, as needed.

Credit Generation Programs (Intercredit Trading) – rulemaking and developing and implementing a program that expands emission credit trading by linking the SCAQMD's stationary and mobile source credit markets.

Criteria Pollutants/Mobile Sources – coordinates the implementation of the AQMP and conducts feasibility studies for mobile source categories; develops control measures and amended rules as warranted.

1-800-CUT-SMOG - See Call Center.

Database Information Support – day-to-day supporting of ad hoc reports and bulk data updates required from SCAQMD's enterprise databases.

Database Management - developing and supporting the data architecture framework, data modeling, database services, and the ongoing administration of SCAQMD's central information repository.

DB/Computerization – developing laboratory instrument computer systems for data handling and control, evaluating the quality of the stored information, and further development and maintenance of the Source Test Information Management System (STIMS).

District Prosecutor Support – see Legal

Economic Development/Business Retention – meeting with various governmental agencies to assist company expansion or retention in the Basin.

WORK PROGRAM GLOSSARY

EJ-AQ Guidance Document – provides outreach to local governments as they update their general plans and make land use decisions. Provide updates to the reference document titled “Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning.”

Emergency Response - responding to emergency air pollution (toxic) incidents, providing air quality monitoring support to local authorities.

Emission Reduction Credit Application Processing – process applications for Emission Reduction Credits (ERC).

Emissions Field Audit – conducting field audits at facilities that have reported through Annual Emissions Reporting (AER) to ensure accurate emission reporting and improve the program.

Emissions Inventory Studies – developing major point source emissions data and area source emissions inventory, updating emissions factors, developing and updating control factors, performing special studies to improve emission data, and responding to public inquiries regarding emission data.

Employee Benefits – administering SCAQMD’s benefit plans, including medical, dental, vision, and life insurance, as well as State Disability Insurance, Section 125 cafeteria plan, Long Term Care and Long Term Disability plans, Section 457 deferred compensation plan, and COBRA program.

Employee Relations – managing the collective bargaining process, administering MOU’s, preparing disciplinary documents, and administering SCAQMD’s performance appraisal program, Family and Medical Leave Act (FMLA) requests, tuition reimbursement, and outside training requests.

Employee/Employment Law – by coordinating with outside counsel, handles legal issues dealing with employment law.

Environmental Education - informing and educating young people about air pollution and their role in bringing clean air to the area.

Environmental Justice (EJ) - a strategy for equitable environmental policymaking and enforcement to protect the health of all persons who live or work in the South Coast District from the health effects of air pollution regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location. The Environmental Justice Initiatives help to identify and address potential areas where citizens may be disproportionately impacted by air pollutants and ensure clean air benefits are accorded to all citizens and communities of the region.

Equal Employment Opportunity – ensuring non-discrimination and equal employment for employees and applicants through broad-based, targeted advertising; training interviewers to ensure fairness in evaluating candidates; ensuring that selection processes and testing

WORK PROGRAM GLOSSARY

instruments are appropriate and job-related; coaching supervisors and managers regarding hiring processes; and gathering data and preparing related staffing reports.

Facilities Services – monitoring service contracts, supporting tenants, overseeing conference center use, administering identification badges, building access control, and key/lock systems, and workspace planning.

Fee Review – activities relating to conducting Fee Review Committee hearings for businesses that contest SCAQMD fees.

Financial Management (Accounting, Financial Analyses, Treasury Management, Systems) - managing the financial aspects of the SCAQMD. This includes SCAQMD's cash management, investment, and accounting programs, and program and financial audits. It also includes maintaining SCAQMD's permit-related financial and accounting records as well as maintaining and enhancing SCAQMD's payroll and accounting systems.

Goods Movement and Financial Incentives – a program to evaluate the air quality issues associated with goods movement and traffic congestion, and for the identification of financial incentives for expedited facility modernization and diesel engine conversion.

Governing Board (Policy) – supporting the operation of the Governing Board and Advisory Groups of the SCAQMD. These activities range from preparing the agenda and minutes to providing support services, legal advice, speeches, letters, and conference coordination.

Grants Management - coordinating, negotiating, monitoring, accounting, and reporting of the SCAQMD's air pollution program and financial activities relating to grants, including EPA, DOE, CEC, and DHS grants and the CARB Subvention.

Graphics Arts - designing and producing presentation materials and SCAQMD publications.

Green House Gas Reporting - many of the businesses and facilities within SCAQMD's jurisdiction are required to report their GHG emissions to CARB under the regulation for Mandatory Reporting of Greenhouse Gases (state) and, beginning in 2011, to the U.S. EPA under their Mandatory Reporting Rule (federal).

Health Effects – conducting research and analyzing the health effects of air pollutants and assessing the health implications of pollutant reduction strategies; working with industry, trade associations, environmental groups, CARB and EPA; providing information to concerned citizens.

Hearing Board (Variances, Abatement Orders, Appeals, Legal) – supporting operation of the SCAQMD's Hearing Board. These activities include accepting petitions filed; preparation and distribution of notices; preparation of minute orders, findings, and decisions of the Board; collection of fees; and general clerical support for the Board.

WORK PROGRAM GLOSSARY

Heavy Duty Trucks DOE ARRA – implement/administer the Department of Energy (DOE) American Recovery and Reinvestment Act (ARRA) Heavy-Duty Natural Gas Drayage Truck Replacement Program.

Information Technology Services - implementing new information technologies to enhance operational efficiency and productivity. Examples include developing workflow applications, training and supporting computer end users, and migrating network operating systems.

Inspections - inspecting facilities and equipment that emit or have the potential to emit air pollutants.

Inspections/RECLAIM Audits – conducting RECLAIM inspections and audits at facilities subject to Regulation XX (RECLAIM).

Interagency Coordination/Liaison - interacting with state, local, and federal control agencies and governmental entities.

Intergovernmental/Geographic Deployment - influencing local policy development and implementing a local government clean air program.

Lawnmower Exchange – residents of the South Coast Air Basin may trade in their gas-powered lawnmower and purchase a new zero-emission, battery electric lawnmower at a significant discount.

Lead Agency Projects – SCAQMD permitting and rule development projects where a CEQA document is prepared and the SCAQMD is the lead agency.

Legal (Advice, District Prosecutor Support, Representation, Legislation, Liability Defense) - providing legal support to SCAQMD in the areas of liability defense, writs of mandate, injunctions, and public hearings. This activity also includes reviewing contracts, and advising staff on rules, fees and other governmental issues.

Legislation (Annual Reports, State, Federal, Legislative Activity) - drafting new legislation, analyzing and tracking proposed legislation, and developing position recommendations on legislation which impacts air quality.

Library - acquiring and maintaining reference materials and documentation that support the SCAQMD's programs.

LNG Trucks CEC – implement/Administer grant agreement with the Clean Energy Commission (CEC) to deploy up to 180 natural gas vehicles used for goods movement operations at the Ports or along the Los Angeles/Inland Empire trade corridor.

WORK PROGRAM GLOSSARY

Lobby Permit Services – providing information and support to applicants to expedite permit processing. Includes consolidating forms, prescreening review for completeness of applications, providing internet access of certain forms and providing “over-the-counter” permits in the lobby of the SCAQMD’s Diamond Bar headquarters.

MATES IV (Multiple Air Toxics Exposure Study) – study that characterizes the concentration of airborne toxic compounds within the South Coast Air Basin and to determine the Basin-wide risks associated with major airborne carcinogens. A new focus of MATES IV will be the inclusion of measurements of ultrafine particle concentrations.

Meteorology - modeling, characterizing, and analyzing both meteorological and air quality data to produce the SCAQMD's daily air quality forecast.

Microscopical Analysis - analyzing, identifying, and quantifying asbestos for compliance with SCAQMD, state, and federal regulations.

Mobile Sources (SCAQMD Rulemaking, Carl Moyer, CARB/EPA and CEC/US DOE monitoring, Emission Incentive Method, Greenhouse Gas Reduction Measures, Strategies (Off Road, Control, Accounting,) - transportation monitoring, strategies, control measures, demonstration projects, and the Mobile Source Air Pollution Reduction Review Committee (MSRC), implementation of Fleet Rules, High Emitter Repair & Scrappage Program, and locomotive remote sensing.

Moyer Program – see Carl Moyer Program

Mutual Settlement Program - resolving civil penalties without court intervention; this program is a mechanism to resolve violations and avoid criminal proceedings.

National Air Toxics Trends Stations (NATTS) – through EPA funding, two sites in the monitoring network are utilized to collect ambient VOC and particulate samples. Samples are analyzed by the SCAQMD lab and reported to EPA where the data is used to determine toxic trends.

Near Roadway (NO₂) Monitoring – federal monitoring requirement that calls for State and Local air monitoring agencies to install near-road NO₂ monitoring stations at locations where peak hourly NO₂ concentrations are expected to occur within the near-road environment in larger urban areas.

Network Operations/Telecommunications – installing, maintaining, and providing operational support of the SCAQMD's PC, voice, data, image, and radio networks; planning, designing, and implementing new network systems or services in response to the SCAQMD's communications and business needs; and providing training, support, and application development services for end-users of voice and PC systems.

WORK PROGRAM GLOSSARY

New Systems Development – providing support for major computer systems development efforts.

New Source Review (NSR) (Data Clean-up, Implementation, Modeling Permit Review, Rulemaking) - developing and implementing New Source Review rules; designing, implementing, and maintaining the Emission Reduction Credits and the New Source Review programs. These programs streamline the evaluation of permit renewal and emissions reporting.

Outreach (Business, Media, Visiting Dignitary) - increasing public awareness of the SCAQMD's programs, goals, permit requirements, and employment opportunities; interacting, providing technical assistance, and acting as liaison between SCAQMD staff and various sectors of the private industry, local governments, and small businesses.

Outreach Media/Communications - monitoring local and national press accounts, both print and broadcast media, to assess SCAQMD's outreach and public opinion on SCAQMD rules and activities. This also includes responding to media calls for informational background material on SCAQMD news stories.

Payroll - paying salaries and benefits to SCAQMD employees, withholding and remitting applicable taxes, and issuing W2s.

Permit Processing NSR, (RECLAIM, Non RECLAIM, Title V, Title III, Pre-Application, Services, Expedited, IM Processing, CEQA Modeling Review, Legal, Support EAC, Expired) - inspecting, evaluating, auditing, analyzing, reviewing and preparing final approval or denial to operate equipment which may emit or control air contaminants.

Permit Streamlining – activities relating to reducing organizational costs and streamlining regulatory and permit requirements on business

Photochemical Assessment Monitoring Systems (PAMS) - promulgating PAMS (a federal regulation), which requires continuous ambient monitoring of speciated hydrocarbons during smog season. Through EPA funding, ozone precursors are measured at seven stations and samples are collected.

Plug-in Hybrid EV DOE ARRA – implement/administer the Department of Energy (DOE) American Recovery and Reinvestment Act (ARRA) Plug-in Hybrid Electric (PHE) Medium Duty Commercial Fleet Demonstration and Evaluation Program.

PM Sampling Program (EPA) – daily collection of particulate samples

PM Monitoring/Strategies Programs (PM_{2.5}, PM₁₀, PM_{10-2.5}) – planning and developing rules related to PM_{2.5}, PM₁₀, and PM_{10-2.5}. Obtaining measurements of particulates at air monitoring stations throughout the South Coast Air Basin (Basin). Measurements are made for Total

WORK PROGRAM GLOSSARY

Suspended Particulate lead, PM₁₀, and PM_{2.5} using federal reference methods (FRM) to determine compliance with state and federal air quality standards.

Port Community Air Quality Enforcement/I-710 Monitoring - inspecting and auditing marine vessels in the Rule 1631 pilot credit generation program. These oversight activities will help ensure the credit generation program produces real, quantified, and enforceable emissions reductions. Measurements including air toxics and criteria pollutants collected to determine impact of port activities on air quality near the ports and surrounding communities.

Portable Equipment Registration Program (PERP) – see CARB PERP Program.

Position Control – tracking Board position authorizations and SCAQMD workforce utilization, processing personnel transactions for use by Payroll, and preparing reports regarding employee status, personnel transactions, and vacant positions.

PR 2301 ISR Rule Implementation– developing and implementing rules to mitigate emissions growth from new and redevelopment projects; the scope of the rule will include the reduction of emissions related to residential, commercial and industrial projects.

Print Shop – prioritizing, coordinating, and performing in-house printing jobs and contracting outside printing/binding services when necessary.

Proposition 1B provides incentive funding for goods movement and lower emission school bus projects with funds approved by voters in November 2006.

Protocols/Reports/Plans/LAP - evaluating and approving protocols, source testing plans and reports submitted by regulated facilities as required by SCAQMD rules and permit conditions, New Source Review, state and federal regulations; and evaluating the capabilities of source test laboratories under the Laboratory Approval Program (LAP).

Public Complaints/Breakdowns - responding to air pollution complaints about odors, smoke, dust, paint overspray, or companies operating out of compliance; responding to industry notifications of equipment breakdowns, possibly resulting in emission exceedances.

Public Education/Public Events – implementing community events and programs to increase the public's understanding of air pollution and their role in improving air quality.

Public Information Center - notifying schools and large employers of predicted and current air quality conditions on a daily basis and providing the public with printed SCAQMD information materials.

Public Notification – providing timely and adequate notification to the public of SCAQMD rulemaking workshops and public hearing, proposed rules, upcoming compliance dates and projects of interest to the public.

WORK PROGRAM GLOSSARY

Public Records Act - providing information to the public as requested and as required by Government Code, Section 6254.

Purchasing (Receiving, Stockroom) - procuring services and supplies necessary to carry out SCAQMD programs.

Quality Assurance – assuring the data quality from the Monitoring and Analysis Division meets or exceeds state and federal standards and also assuring the appropriateness of the data for supporting SCAQMD regulatory, scientific and administrative decisions.

RECLAIM/Admin Support – developing and implementing rules, and monitoring of emissions of the REgional CLean Air Incentives Market (RECLAIM) program, a market incentives trading program designed to help achieve federal and state ambient air quality standards in a cost-effective manner with minimal impacts to jobs or public health. Also see Permit Processing.

Records Information Management Plan – providing the process to comply with internal and external requirements for the retention and retrieval of information pertinent to the mission and operation of the SCAQMD.

Records Services – maintaining SCAQMD’s central records and files, converting paper files to images, and operating the network image management system; providing for all off-site long-term storage of records and for developing and monitoring the SCAQMD’s Records Retention Policy.

Recruitment and Selection – assisting SCAQMD management in meeting staffing needs by conducting fair and non-discriminatory recruitment and selection processes that result in qualified, diverse applicants for SCAQMD jobs; overseeing promotional and transfer processes, and reviewing proposed staff reassignments.

Refinery Pilot Project – pursuant to the AQMP, a Working Group was formed to examine the efficacy of an alternative regulatory approach to reducing refinery emissions beyond the current requirements by establishing a targeted emission reduction commitment for each refinery which would be established for a set period of time and allow the use of on-site or off-site reduction strategies with acceptable environmental justice attributes.

Regional Modeling – designing, performing, and reviewing modeling and risk assessment analysis to assess the air quality impacts of new or modified sources of air pollution. Also see Meteorology.

Ridesharing - implementing the SCAQMD’s own Rule 2202 Trip Reduction Plan.

Risk Management - developing and administering the SCAQMD's liability, property, and workers’ compensation and safety programs.

WORK PROGRAM GLOSSARY

Rule 1610 – ensuring compliance with Rule 1610, Old-Vehicle Scrapping.

Rule 2202 ETC Training –administering and conducting monthly Rule 2202 implementation training classes, workshops and/or forums for the regulated public and other interested individuals.

Rule 222 Implement/Support/Filing Program – ensuring compliance with Rule 222 for equipment subject to a filing requirement with the SCAQMD.

Rulemaking/Rules (NO_x, BACT, SO_x, VOC, Toxics, RECLAIM, Support PRA, Legal Advice) – developing new rules and evaluating existing SCAQMD and CARB rules and compliance information to assure timely implementation of the AQMP and its control measures.

School Bus Lower Emission Program – funding to replace pre-1987 diesel school buses with new alternative fuel buses owned and operated by public school districts.

SCAQMD Mail – processing and delivering all incoming and outgoing mail.

SCAQMD Projects – SCAQMD permitting and rule development projects where a CEQA (California Environmental Quality Act) document is prepared and the SCAQMD is the lead agency.

School Siting – identifying any hazardous emission sources within one-quarter mile of a new school site as required by AB3205. District activities include reporting of criteria and toxic pollutant information and conducting inspections of permitted facilities within a quarter-mile radius of proposed schools.

Small Business Assistance (Financial, Legal, Permit Streamlining) - providing technical and financial assistance to facilitate the permit process for small businesses.

Socio-Economic - developing an economic database to forecast economic activity, analyzing economic benefits of air pollution control, and analyzing the social impact of economic activity resulting from air quality regulations and plans.

Source Education - providing classes to facility owners and operators to ensure compliance with applicable SCAQMD's rules and regulations.

Source Testing (ST) – conducting source tests as needed in support of permitting functions and to determine compliance with permit conditions and SCAQMD Rules. Additionally, data submitted by facilities is reviewed for protocol approval, CEMS certification, or test data acceptance.

WORK PROGRAM GLOSSARY

Speaker's Bureau - training SCAQMD staff for advising local government and private industry on air quality issues.

Special Monitoring (Emergency, Rule 403) – performing special ambient air sampling at locations where public health, nuisance concern, or Rule 403 violations may exist; determining the impacts from sources emitting toxics on receptor areas; and performing special monitoring in support of the emergency response program and public complaints response. Also see Emergency Responses.

Sample Analyses – analyzing samples submitted by inspectors to determine compliance with SCAQMD Rules. Samples are also analyzed in support of rule development activities.

Student Interns – providing mutually beneficial educational hands-on experience for high school and college students by providing them with the opportunity to engage in day-to-day work with mentoring professionals within SCAQMD.

Subscription Services - maintaining the SCAQMD's rule subscription mailing list and coordinating the mailing of SCAQMD publications.

Systems Implementation – implementing activities required to maintain an integrated Financial and Human Resources system, including additional features and functions introduced with scheduled software upgrades.

Systems Maintenance - routinely maintaining installed production data systems that support SCAQMD's business fluctuations, including minor modifications, special requests, fixes, and general maintenance.

Targeted Air Shed – funding from EPA to reduce air pollution in the nation's areas with the highest levels of ozone or particulate matter 2.5 (PM_{2.5}) exposure.

Technology Advancement (Commercialization, non-Combustion) - supporting the development of innovative controls for mobile and stationary sources, reviewing promising control technologies, and identifying those most deserving of SCAQMD developmental support.

Title III (Inspections, Rulemaking) - permitting equipment that emits hazardous air pollutants in compliance with the federal Clean Air Act.

Title V (Compliance/Legal Advice, Inspections, NSR Legal Advice Permit Streamlining, Permits, Rulemaking) - developing and implementing a permit program in compliance with the federal Clean Air Act.

Toxic Inventory Development – non-facility specific tasks performed by the AB 2588 team to include toxic inventory development, support for rule development, and responding to public records and other data requests.

WORK PROGRAM GLOSSARY

Toxics/AB 2588 – evaluation of toxic inventories, risk assessments and risk reduction plans, with public notification as required. Analyzing, evaluating, reviewing, and making recommendations regarding toxic substances and processes and contributing input to District toxic rules and programs.

Training (Education, Organizational and Human Resources Development, Staff) - providing increased training in the areas of personnel education, computers, safety procedures, new programs, hazardous materials, and new technologies.

Transportation Regional Programs/Research – actively participate in Advisory Groups and Policy Committees involving the development and monitoring of the District’s AQMP, Congestion Mitigation Air Quality Improvement Program (CMAQ), Safe Accountable Flexible Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Transportation Control Measures (TCMs) and regional alternative commute mode programs.

TraPac Air Filtration Program – implement/administer the installation and maintenance of air filtration systems at Wilmington area schools.

Union Negotiations/Union Steward Activities – Union-related activities of union stewards including labor management negotiations and assisting in the filing of employee grievances.

VEE Trains – conducting periodic visible emission evaluations of trains to verify compliance with visible emission requirements.

VOC Sample Analysis (Compliance/Rules/SBA/Other) - providing data and technical input for VOC rule development, performing analytical testing for compliance with SCAQMD rules regulating VOC content in coatings, inks, plastic foam, paint, adhesives, and solvents, and providing assistance and technical input to small businesses and other regulatory agencies, industry and the public.

Voucher Incentive Program (VIP) - incentive program designed to reduce emissions by replacing old, high-polluting vehicles with newer, lower-emission vehicles, or by installing a Verified Diesel Emission Control Strategy (VDECS).

Web Tasks – preparing and reviewing materials for posting to SCAQMD’s internet and/or intranet website.

WORK PROGRAM ACRONYMS

ORGANIZATIONAL UNITS

| | |
|-----|---|
| AHR | Administrative & Human Resources |
| CB | Clerk of the Boards |
| EAC | Engineering & Compliance |
| EO | Executive Office |
| FIN | Finance |
| GB | Governing Board |
| IM | Information Management |
| LEG | Legal |
| LPA | Legislative & Public Affairs |
| MO | Media Office |
| PRA | Planning, Rule Development & Area Sources |
| STA | Science & Technology Advancement |

PROGRAMS

| | |
|-----------|--|
| AB 1318 | Offsets-Electrical Generating Facilities |
| AB 2588 | Air Toxics (“Hot Spots”) |
| AB 2766 | Mobile Sources |
| APEP | Annual Permit Emissions Program |
| AQIP | Air Quality Investment Program |
| AQMP | Air Quality Management Plan |
| BACT | Best Available Control Technology |
| CEMS | Continuous Emissions Monitoring Systems |
| CEQA | California Environmental Quality Act |
| CF | Clean Fuels Program |
| CMP | Congestion Management Plan |
| ERC | Emission Reduction Credit |
| MATES | Multiple Air Toxics Exposure Study |
| MS | Mobile Sources Program |
| NSR | New Source Review |
| PERP | Portable Equipment Registration Program |
| PR | Public Records Act |
| QA | Quality Assurance |
| RFP | Reasonable Further Progress |
| RECLAIM | REgional Clean Air Incentives Market |
| SB 1928 | Clean Fuels |
| ST | Source Test |
| Title III | Federally Mandated Toxics Program |
| Title V | Federally Mandated Permit Program |
| VIP | Voucher Incentive Program |

POLLUTANTS

| | |
|-------------------|---------------------------------|
| CO | Carbon Monoxide |
| NO _x | Oxides of Nitrogen |
| O ₃ | Ozone |
| PM _{2.5} | Particulate Matter <2.5 microns |
| PM ₁₀ | Particulate Matter ≤ 10 microns |
| ROG | Reactive Organic Gases |
| SO _x | Oxides of Sulfur |
| VOC | Volatile Organic Compound |

SCAQMD RULES AND REGULATIONS

| | |
|-----------|--|
| Rule 403 | Fugitive Dust |
| Rule 2202 | On-Road Motor Vehicle Mitigation Options |

GOVERNMENT AGENCIES

| | |
|-------|--|
| APCD | Air Pollution Control District (Generic) |
| CARB | California Air Resources Board |
| CEC | California Energy Commission |
| DHS | Department of Homeland Security |
| DOE | Department of Energy |
| EPA | Environmental Protection Agency |
| NACAA | National Association of Clean Air Agencies |
| SCAG | Southern California Association of Governments |

GENERAL

| | |
|---------|---|
| AA | Affirmative Action |
| AER | Annual Emissions Reporting |
| AM | Air Monitoring |
| AQSCR | Air Quality Standards Compliance Report |
| ARRA | American Recovery and Reinvestment Act |
| ATIP | Air Toxics Inventory Plan |
| AVR | Average Vehicle Ridership |
| CE-CERT | College of Engineering-Center for Environmental Research and Technology |
| CLASS | Clean Air Support System |
| CNG | Compressed Natural Gas |
| CTC | County Transportation Commission |
| CTG | Control Techniques Guideline |
| DB | Database |
| DPF | Diesel Particulate Filter |
| EIR | Environmental Impact Report |
| EJ | Environmental Justice |
| ETC | Employee Transportation Coordinator |
| EV | Electric Vehicle |
| FIP | Federal Implementation Plan |
| FY | Fiscal Year |
| GHG | Greenhouse Gas |
| HR | Human Resources |
| HRA | Health Risk Assessment |
| IAIC | Interagency AQMP Implementation Committee |
| IGA | Intergovernmental Affairs |
| ISR | Indirect Source Rules |
| LAER | Lowest Achievable Emissions Rate |
| LEV | Low Emission Vehicle |
| LNG | Liquefied Natural Gas |
| LS | Laboratory Services |
| MA | Monitoring & Analysis Activities |
| MOU | Memorandum of Understanding |
| MPO | Metropolitan Planning Organization |
| MSERCs | Mobile Source Emission Reduction Credits |
| MSRC | Mobile Source (Air Pollution Reduction) Review Committee |
| NATTS | National Air Toxics Trends Stations |
| NESHAPS | National Emission Standards for Hazardous Air Pollutants |
| NGV | Natural Gas Vehicle |
| NOV | Notice of Violation |
| ODC | Ozone Depleter Compounds |
| PAMS | Photochemical Assessment Monitoring System |
| PAR | Proposed Amended Rule |
| PE | Program Evaluations |
| PR | Proposed Rule |
| RFP | Request for Proposal |
| RFQ | Request for Quotations |
| RTC | RECLAIM Trading Credit |
| SBA | Small Business Assistance |
| SIP | State Implementation Plan |
| SCR | Selective Catalytic Reduction |
| STE | Source Testing Evaluations |
| SULEV | Super Ultra Low-Emission Vehicle |
| TA | Technology Advancement Activities |
| TCM | Transportation Control Measure |
| ULEV | Ultra- Low-Emissions Vehicle |
| VEE | Visible Emissions Evaluations |
| VMT | Vehicle Miles Traveled |
| ZEV | Zero-Emission Vehicle |



**SOUTH COAST
AIR QUALITY MANAGEMENT DISTRICT**

Governing Board

The Governing Board is made up of 13 officials who meet monthly to establish policy and review new or amended rules for approval. The Governing Board appoints the SCAQMD Executive Officer and General Counsel, and members of the Hearing Board.

Governing Board members include:

- One county Board of Supervisor's representative each from the counties of Los Angeles, Orange, Riverside, and San Bernardino;
- One representative each from cities within Orange, Riverside, and San Bernardino counties, two representatives from cities within Los Angeles County, and one city representative from the City of Los Angeles;
- One representative appointed by the Governor, one by the Assembly Speaker, and one by the Senate Rules Committee.

| Governing Board Work Program by Office | | | | | | | | | |
|---|--------------|------------------|---------------------|-----------------|---------------------------------|------------|----------|------------|--------------------|
| # | Program Code | Program Category | Goal | Program | Activities | FY 2013-14 | FTEs +/- | FY 2014-15 | Revenue Categories |
| 1 | 02 | 275 | Operational Support | Governing Board | Rep of Dist Meet/Conf/Testimony | 0.00 | 0.00 | 0.00 | 1a |
| Total | | | | | | 0.00 | 0.00 | 0.00 | \$ - |

| Governing Board Line Item Expenditure | | | | | |
|---|-------------------------------|--|--|----------------------------------|--------------------------------|
| Major Object / Account # / Account Description | FY 2012-13 Actuals | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2013-14 Estimate * | FY 2014-15 Proposed |
| Salary & Employee Benefits | | | | | |
| 51000-52000 Salaries | \$ 257,548 | \$ 362,856 | \$ 362,856 | \$ 337,892 | \$ 403,710 |
| 53000-55000 Employee Benefits | 21,747 | 248,815 | 248,815 | 92,629 | 252,431 |
| Sub-total Salary & Employee Benefits | \$ 279,295 | \$ 611,671 | \$ 611,671 | \$ 430,521 | \$ 656,140 |
| Services & Supplies | | | | | |
| 67250 Insurance | \$ - | \$ - | \$ - | \$ - | \$ - |
| 67300 Rents & Leases Equipment | - | - | - | - | - |
| 67350 Rents & Leases Structure | - | - | - | - | - |
| 67400 Household | - | - | - | - | - |
| 67450 Professional & Special Services | 362,376 | 436,777 | 436,777 | 370,254 | 436,777 |
| 67460 Temporary Agency Services | - | - | - | - | - |
| 67500 Public Notice & Advertising | 34,472 | 52,000 | 44,000 | 37,743 | 52,000 |
| 67550 Demurrage | - | - | - | - | - |
| 67600 Maintenance of Equipment | - | - | - | - | - |
| 67650 Building Maintenance | - | - | - | - | - |
| 67700 Auto Mileage | 11,299 | 10,000 | 10,000 | 10,000 | 10,000 |
| 67750 Auto Service | - | - | - | - | - |
| 67800 Travel | 45,104 | 64,800 | 64,800 | 42,994 | 64,800 |
| 67850 Utilities | - | - | - | - | - |
| 67900 Communications | 21,046 | 15,000 | 21,104 | 30,317 | 20,000 |
| 67950 Interest Expense | - | - | - | - | - |
| 68000 Clothing | - | - | - | - | - |
| 68050 Laboratory Supplies | - | - | - | - | - |
| 68060 Postage | 3,916 | 10,000 | 10,000 | 3,046 | 10,000 |
| 68100 Office Expense | 57 | 4,000 | 4,000 | 3,446 | 4,000 |
| 68200 Office Furniture | - | - | - | - | - |
| 68250 Subscriptions & Books | - | - | - | - | - |
| 68300 Small Tools, Instruments, Equipment | - | - | - | - | - |
| 68350 Film | - | - | - | - | - |
| 68400 Gas and Oil | - | - | - | - | - |
| 69500 Training/Conference/Tuition/ Board Exp. | 105,763 | 112,500 | 112,500 | 105,763 | 112,500 |
| 69550 Memberships | - | - | - | - | - |
| 69600 Taxes | - | - | - | - | - |
| 69650 Awards | - | - | - | - | - |
| 69700 Miscellaneous Expenses | 15,010 | 9,110 | 17,110 | 17,110 | 15,000 |
| 69750 Prior Year Expense | - | - | - | - | - |
| 69800 Uncollectable Accounts Receivable | - | - | - | - | - |
| 89100 Principal Repayment | - | - | - | - | - |
| Sub-total Services & Supplies | \$ 599,043 | \$ 714,187 | \$ 720,291 | \$ 620,672 | \$ 725,077 |
| 77000 Capital Outlays | \$ - | \$ - | \$ - | \$ - | \$ - |
| 79050 Building Remodeling | \$ - | \$ - | \$ - | \$ - | \$ - |
| Total Expenditures | \$ 878,337 | \$ 1,325,858 | \$ 1,331,962 | \$ 1,051,194 | \$ 1,381,217 |

* Estimates based on July 2013 through March 2014 actual expenditures and budget amendments.



**SOUTH COAST
AIR QUALITY MANAGEMENT DISTRICT**

DISTRICT GENERAL

Accounts associated with general operations of the SCAQMD are budgeted and tracked in District General. Included are such items as principal and interest payments, insurance, utilities, taxes, housekeeping, security, and building maintenance and improvements.

| District General Line Item Expenditure | | | | | | |
|--|---|-----------------------|---------------------------------|---------------------------------|--------------------------|------------------------|
| Major Object / Account # / Account Description | | FY 2012-13 Actuals | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2013-14 Estimate * | FY 2014-15 Proposed |
| Salary & Employee Benefits | | | | | | |
| 51000-52000 | Salaries | \$ - | \$ 1,584,000 | \$ 1,334,000 | \$ 1,061,185 | \$ 992,197 |
| 53000-55000 | Employee Benefits | 16,240 | 120,000 | 120,000 | 32,443 | 120,000 |
| Sub-total Salary & Employee Benefits | | \$ 16,240 | \$ 1,704,000 | \$ 1,454,000 | \$ 1,093,628 | \$ 1,112,197 |
| Services & Supplies | | | | | | |
| 67250 | Insurance | \$ 1,132,351 | \$ 1,097,400 | \$ 1,097,400 | \$ 1,097,400 | \$ 1,317,400 |
| 67300 | Rents & Leases Equipment | 31,986 | 18,600 | 22,600 | 22,600 | 18,600 |
| 67350 | Rents & Leases Structure | 19,824 | 30,000 | 30,000 | 19,824 | 30,000 |
| 67400 | Household | 442,424 | 707,332 | 702,332 | 486,853 | 707,332 |
| 67450 | Professional & Special Services | 1,045,074 | 1,091,029 | 1,131,029 | 1,069,009 | 1,156,029 |
| 67460 | Temporary Agency Services | - | - | - | - | - |
| 67500 | Public Notice & Advertising | 21,398 | 28,000 | 28,000 | 21,398 | 25,000 |
| 67550 | Demurrage | - | - | - | - | - |
| 67600 | Maintenance of Equipment | 115,308 | 141,400 | 101,400 | 82,689 | 141,900 |
| 67650 | Building Maintenance | 529,382 | 911,479 | 836,479 | 836,479 | 1,436,479 |
| 67700 | Auto Mileage | 12 | - | - | - | - |
| 67750 | Auto Service | - | - | - | - | - |
| 67800 | Travel | - | - | - | - | - |
| 67850 | Utilities | 1,405,249 | 1,591,881 | 1,587,881 | 1,587,881 | 1,766,989 |
| 67900 | Communications | 97,119 | 116,900 | 109,812 | 109,812 | 120,900 |
| 67950 | Interest Expense | 2,872,971 | 4,094,658 | 4,094,658 | 4,094,658 | 4,076,994 |
| 68000 | Clothing | - | - | - | - | - |
| 68050 | Laboratory Supplies | - | - | - | - | - |
| 68060 | Postage | 23,022 | 20,000 | 25,000 | 25,000 | 20,000 |
| 68100 | Office Expense | 690,024 | 278,800 | 278,800 | 278,800 | 278,800 |
| 68200 | Office Furniture | - | 4,000 | 4,000 | 4,000 | 4,000 |
| 68250 | Subscriptions & Books | - | - | - | - | - |
| 68300 | Small Tools, Instruments, Equipment | - | - | - | - | - |
| 68350 | Film | - | - | - | - | - |
| 68400 | Gas and Oil | - | - | - | - | - |
| 69500 | Training/Conference/Tuition/ Board Exp. | - | - | - | - | - |
| 69550 | Memberships | - | - | - | - | - |
| 69600 | Taxes | 16,314 | 41,000 | 41,000 | 19,341 | 41,000 |
| 69650 | Awards | 12,216 | 27,342 | 27,342 | 22,146 | 27,342 |
| 69700 | Miscellaneous Expenses | 10,984 | 10,275 | 10,275 | 10,010 | 10,375 |
| 69750 | Prior Year Expense | (18,262) | - | - | - | - |
| 69800 | Uncollectable Accounts Receivable | 454,094 | - | - | - | - |
| 89100 | Principal Repayment | 7,347,007 | 3,121,383 | 3,121,383 | 3,121,383 | 3,159,384 |
| Sub-total Services & Supplies | | \$ 16,248,496 | \$ 13,331,479 | \$ 13,249,391 | \$ 12,909,283 | \$ 14,338,524 |
| 77000 | Capital Outlays | \$ 1,341,163 | \$ 840,000 | \$ 729,377 | \$ 871,028 | \$ 150,000 |
| 79050 | Building Remodeling | \$ - | \$ - | \$ - | \$ - | \$ - |
| Total Expenditures | | \$ 17,605,899 | \$ 15,875,479 | \$ 15,432,768 | \$ 14,873,939 | \$ 15,600,721 |

* Estimates based on July 2013 through March 2014 actual expenditures and budget amendments.

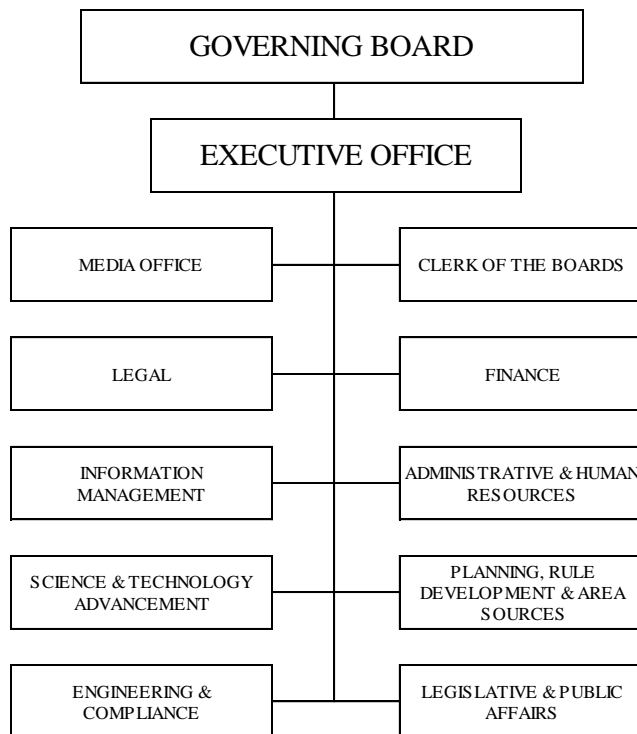
EXECUTIVE OFFICE

BARRY R. WALLERSTEIN
EXECUTIVE OFFICER

DESCRIPTION OF MAJOR SERVICES:

The Executive Office is responsible for the comprehensive management of the SCAQMD and the development and implementation of near-term and long-term strategies to attain ambient air quality standards. The office translates set goals and objectives into effective programs and enforceable regulations that meet federal and state statutory requirements, while being sensitive to potential socioeconomic and environmental justice impacts in the South Coast Air Basin.

The Executive Office currently consists of the Executive Officer, a Senior Policy Advisor, and five support staff. The Executive Officer serves as Chief of Operations in implementing policy directed by the agency's 13-member Governing Board and in working proactively with state and federal regulatory officials. The Executive Officer also oversees all of the day-to-day administrative functions of staff and the annual operating budget.



POSITION SUMMARY: 7 FTEs

| Unit | Current (FY 13-14) | Changes | Proposed (FY 14-15) |
|-----------------------|-----------------------|---------|------------------------|
| Office Administration | 7 | - | 7 |

STAFFING DETAIL:

2014-15 Requested Staffing

| <u>Position</u> | <u>Title</u> |
|-----------------|---------------------------------|
| 1 | Executive Officer |
| 3 | Executive Secretary |
| 1 | Senior Administrative Secretary |
| 1 | Senior Policy Advisor |
| <u>1</u> | Staff Specialist |
| 7 | Total Requested Positions |

| Executive Office Work Program by Office | | | | | | | | | |
|--|--------------|------------------|--|--------------------------------|---|----------------|------------|--------------------|--|
| # | Program Code | Program Category | Goal | Program | Activities | FY 2013-14 +/- | FY 2014-15 | Revenue Categories | |
| 1 | 03 | 010 | Develop Programs | AQMP | Develop/Implement AQMP | 0.05 | 0.05 | II,IX | |
| 2 | 03 | 028 | Develop Programs | Admin/SCAQMD Policy | Dev/Coord Goals/Policies/Overs | 2.00 | 2.00 | 1a | |
| 3 | 03 | 038 | Operational Support | Admin/Office Management | Budget/Program Management | 1.00 | 1.00 | 1b | |
| 4 | 03 | 078 | Policy Support | Asthma & Outdoor AQ Consortium | Asthma & Outdoor AQ Consortium | 0.01 | 0.01 | 1a | |
| 5 | 03 | 083 | Policy Support | Brain Tumor & Air Poll Foundat | Brain Tumor & Air Poll Foundation Support | 0.03 | 0.03 | 1a | |
| 6 | 03 | 275 | Policy Support | Governing Board | Board/Committee Support | 1.60 | 1.60 | 1a | |
| 7 | 03 | 276 | Policy Support | Advisory Group/Governing Board | Governing Board Advisory Group | 0.05 | 0.05 | 1a | |
| 8 | 03 | 381 | Policy Support | Interagency Liaison | Local/State/Fed Coord/Interact | 0.40 | 0.40 | 1a | |
| 9 | 03 | 385 | Develop Rules | Credit Generation Programs | Dev/Impl Marketable Permit | 0.02 | 0.02 | II | |
| 10 | 03 | 390 | Customer Service and Business Assistance | Local Govt Policy Development | Policy Development | 0.05 | 0.05 | 1a | |
| 11 | 03 | 410 | Policy Support | Legislation | Testimony/Mtgs:New/Current Leg | 0.50 | 0.50 | 1a | |
| 12 | 03 | 416 | Policy Support | Legislative Activities | Supp/Promote/Influence Legis/Adm | 0.05 | 0.05 | 1a | |
| 13 | 03 | 455 | Advance Clean Air Technology | Mobile Sources | Dev/Impl Mobile Source Strategies | 0.10 | 0.10 | IX | |
| 14 | 03 | 490 | Customer Service and Business Assistance | Outreach | Publ Awareness Clean Air Prog | 1.00 | 1.00 | 1a | |
| 15 | 03 | 565 | Customer Service and Business Assistance | Public Records Act | Comply w/ Public Req for Info | 0.05 | 0.05 | 1a | |
| 16 | 03 | 650 | Develop Rules | Rules | Develop & Implement Rules | 0.04 | 0.04 | IV,IX | |
| 17 | 03 | 717 | Policy Support | Student Interns | Gov Board/Student Intern Program | 0.02 | 0.02 | 1a | |
| 18 | 03 | 855 | Operational Support | Web Tasks | Create/edit/review web content | 0.03 | 0.03 | 1a | |

| | | | |
|--------------|------|------|------|
| Total | 7.00 | 0.00 | 7.00 |
|--------------|------|------|------|

| Executive Office Line Item Expenditure | | | | | | |
|--|---|---------------------------------|---------------------------------|--------------------------|------------------------|--------------|
| Major Object / Account # / Account Description | FY 2012-13 Actuals | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2013-14 Estimate * | FY 2014-15 Proposed | |
| Salary & Employee Benefits | | | | | | |
| 51000-52000 | Salaries | \$ 878,845 | \$ 829,017 | \$ 829,017 | \$ 837,159 | \$ 825,697 |
| 53000-55000 | Employee Benefits | 553,134 | 500,334 | 500,333 | 525,137 | 508,905 |
| Sub-total Salary & Employee Benefits | | \$ 1,431,979 | \$ 1,329,351 | \$ 1,329,350 | \$ 1,362,296 | \$ 1,334,602 |
| Services & Supplies | | | | | | |
| 67250 | Insurance | \$ - | \$ - | \$ - | \$ - | \$ - |
| 67300 | Rents & Leases Equipment | - | - | - | - | - |
| 67350 | Rents & Leases Structure | - | - | - | - | - |
| 67400 | Household | - | - | - | - | - |
| 67450 | Professional & Special Services | 49,585 | 50,000 | 35,000 | 30,447 | 50,000 |
| 67460 | Temporary Agency Services | - | - | - | - | - |
| 67500 | Public Notice & Advertising | 0 | 7,500 | 7,500 | - | 7,500 |
| 67550 | Demurrage | - | - | - | - | - |
| 67600 | Maintenance of Equipment | - | 400 | 400 | - | 400 |
| 67650 | Building Maintenance | - | - | - | - | - |
| 67700 | Auto Mileage | 296 | 800 | 800 | 638 | 800 |
| 67750 | Auto Service | - | - | - | - | - |
| 67800 | Travel | 38,752 | 52,000 | 52,000 | 43,100 | 52,000 |
| 67850 | Utilities | - | - | - | - | - |
| 67900 | Communications | 3,542 | 6,500 | 6,500 | 6,410 | 6,500 |
| 67950 | Interest Expense | - | - | - | - | - |
| 68000 | Clothing | - | - | - | - | - |
| 68050 | Laboratory Supplies | - | - | - | - | - |
| 68060 | Postage | 154 | 7,000 | 7,000 | 154 | 7,000 |
| 68100 | Office Expense | 1,534 | 6,000 | 6,000 | 2,868 | 6,000 |
| 68200 | Office Furniture | - | - | - | - | - |
| 68250 | Subscriptions & Books | 359 | 5,000 | 5,000 | 694 | 5,000 |
| 68300 | Small Tools, Instruments, Equipment | - | - | - | - | - |
| 68350 | Film | - | - | - | - | - |
| 68400 | Gas and Oil | - | - | - | - | - |
| 69500 | Training/Conference/Tuition/ Board Exp. | 2,095 | 1,000 | 2,000 | 1,905 | 1,000 |
| 69550 | Memberships | 25,000 | 26,000 | 26,000 | 25,000 | 26,000 |
| 69600 | Taxes | - | - | - | - | - |
| 69650 | Awards | - | - | - | - | - |
| 69700 | Miscellaneous Expenses | 1,536 | 25,000 | 24,000 | 2,195 | 25,000 |
| 69750 | Prior Year Expense | - | - | - | - | - |
| 69800 | Uncollectable Accounts Receivable | - | - | - | - | - |
| 89100 | Principal Repayment | - | - | - | - | - |
| Sub-total Services & Supplies | | \$ 122,853 | \$ 187,200 | \$ 172,200 | \$ 113,411 | \$ 187,200 |
| 77000 | Capital Outlays | \$ - | \$ - | \$ - | \$ - | \$ - |
| 79050 | Building Remodeling | \$ - | \$ - | \$ - | \$ - | \$ - |
| Total Expenditures | | \$ 1,554,832 | \$ 1,516,551 | \$ 1,501,550 | \$ 1,475,706 | \$ 1,521,802 |

* Estimates based on July 2013 through March 2014 actual expenditures and budget amendments.

CLERK OF THE BOARDS

**SAUNDRA MCDANIEL
CLERK OF THE BOARDS**

DESCRIPTION OF MAJOR SERVICES:

The Clerk of the Boards office coordinates the activities, provides operational support, and maintains the official records for both the Governing Board and the Hearing Board. The Clerk's office is responsible for preparing the legal notices for hearings and meetings, and ensuring that such notices are published as required. Clerk of the Boards' staff assists petitioners and attorneys in the filing of petitions before the Hearing Board and explains the Hearing Board's functions and procedures. Staff prepares Minute Orders, Findings and Decisions of the Hearing Board, and Summary Minutes of Governing Board meetings. The Clerk acts as communication liaison for the Boards with SCAQMD staff and state and federal agencies.

ACCOMPLISHMENTS:

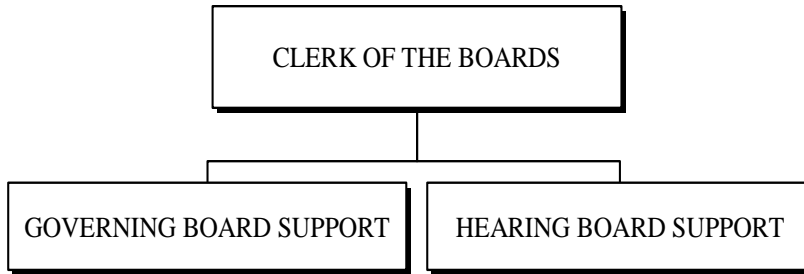
RECENT:

- Received and processed 44 subpoenas, public/administrative records requests, and claims against the District.
- Provided support for 13 Governing Board meetings, including: preparing an agenda and minutes for each meeting; preparation, distribution, and publication of 23 meeting and public hearing notices; preparation of 23 Board Resolutions.
- Provided support for 132 hearings, pre-hearing conferences, and general meetings held by the Hearing Board, including: processing 150 petitions; preparation, distribution, and publication of 155 meeting and public hearing notices; preparation of 206 Minute Orders, Findings & Decisions, Pre-hearing Memoranda, and General Meeting Reports of Actions; and preparation and distribution of 202 daily agendas and monthly case calendars.
- Switched from cassette tape to digital recording of Governing Board and Hearing Board proceedings.
- Planned/coordinated efforts and provided clerical support for special offsite meetings.

ANTICIPATED:

- Provide support for approximately 140 hearings, pre-hearing conferences, and general meetings held by the Hearing Board, including: processing approximately 160 petitions; preparation, distribution, and publication of 130-140 meeting and public hearing notices; preparation of over 200 Minute Orders, Findings and Decisions, Pre-hearing Memoranda, and General Meeting Reports of Actions; and preparation and distribution of more than 200 daily agendas and monthly case calendars.

ORGANIZATIONAL CHART:



POSITION SUMMARY: 6 FTEs

| Unit | Current (FY 2013-14) | Changes | Proposed (FY 2014-15) |
|---------------------------------|-------------------------|---------|--------------------------|
| Governing/Hearing Board Support | 6 | - | 6 |

STAFFING DETAIL:

2014-15 Requested Staffing

| <u>Position</u> | <u>Title</u> |
|-----------------|---------------------------|
| 1 | Clerk of the Board |
| 3 | Deputy Clerk/Transcriber |
| 1 | Office Assistant |
| <u>1</u> | Senior Deputy Clerk |
| 6 | Total Requested Positions |

**Clerk of the Boards
Work Program by Office**

| # | Program Code | Program Category | Goal | Program | Activities | FY 2013-14 | FTEs +/- | FY 2014-15 | Revenue Categories |
|--------------|--------------|--|------|---------------------------------|--------------------------------|------------|----------|------------|--------------------|
| 1 | 17 024 | Operational Support | III | Admin/SCAQMD/GB/HB Mgmt | Admin Governing/Hearing Brds | 1.25 | | 1.25 | 1a,VII,XV |
| 2 | 17 275 | Operational Support | III | Governing Board | Attend/Record/Monitor Meetings | 1.40 | | 1.40 | 1a |
| 3 | 17 364 | Ensure Compliance | I | Hearing Board/Abatement Orders | Attn/Recrd/Monitr Mtgs | 0.10 | | 0.10 | IV |
| 4 | 17 365 | Ensure Compliance | I | Hearing Board/Variiances/Appeal | Attend/Record/Monitor HB Mtgs | 3.20 | | 3.20 | IV,V,VII |
| 5 | 17 565 | Customer Service and Business Assistance | III | Public Records Act | Comply w/ Public Rec Requests | 0.02 | | 0.02 | 1a |
| 6 | 17 855 | Ensure Compliance | II | Web Tasks | Create/edit/review web content | 0.03 | | 0.03 | 1a |
| Total | | | | | | 6.00 | 0.00 | 6.00 | |

| Clerk of the Boards Line Item Expenditure | | | | | |
|--|-----------------------|---------------------------------|---------------------------------|--------------------------|------------------------|
| Major Object / Account # / Account Description | FY 2012-13 Actuals | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2013-14 Estimate * | FY 2014-15 Proposed |
| Salary & Employee Benefits | | | | | |
| 51000-52000 Salaries | \$ 413,597 | \$ 377,796 | \$ 377,796 | \$ 386,556 | \$ 377,366 |
| 53000-55000 Employee Benefits | 240,364 | 227,856 | 227,856 | 250,365 | 247,048 |
| Sub-total Salary & Employee Benefits | \$ 653,961 | \$ 605,652 | \$ 605,652 | \$ 636,922 | \$ 624,414 |
| Services & Supplies | | | | | |
| 67250 Insurance | \$ - | \$ - | \$ - | \$ - | \$ - |
| 67300 Rents & Leases Equipment | - | - | - | - | - |
| 67350 Rents & Leases Structure | - | - | - | - | - |
| 67400 Household | - | - | - | - | - |
| 67450 Professional & Special Services | 17,393 | 25,400 | 25,400 | 17,393 | 25,400 |
| 67460 Temporary Agency Services | - | - | - | - | - |
| 67500 Public Notice & Advertising | 29,676 | 40,000 | 40,000 | 34,527 | 40,000 |
| 67550 Demurrage | - | - | - | - | - |
| 67600 Maintenance of Equipment | - | 200 | 200 | - | 200 |
| 67650 Building Maintenance | - | - | - | - | - |
| 67700 Auto Mileage | - | 100 | 100 | 60 | 100 |
| 67750 Auto Service | - | - | - | - | - |
| 67800 Travel | 24 | 200 | 200 | 24 | 200 |
| 67850 Utilities | - | - | - | - | - |
| 67900 Communications | - | 500 | 500 | 500 | 500 |
| 67950 Interest Expense | - | - | - | - | - |
| 68000 Clothing | - | - | - | - | - |
| 68050 Laboratory Supplies | - | - | - | - | - |
| 68060 Postage | 788 | 1,200 | 1,200 | 975 | 1,200 |
| 68100 Office Expense | 1,529 | 6,600 | 6,600 | 2,181 | 6,600 |
| 68200 Office Furniture | - | - | - | - | - |
| 68250 Subscriptions & Books | - | - | - | - | - |
| 68300 Small Tools, Instruments, Equipment | - | - | - | - | - |
| 68350 Film | - | - | - | - | - |
| 68400 Gas and Oil | - | - | - | - | - |
| 69500 Training/Conference/Tuition/ Board Exp. | 359,701 | 381,450 | 381,450 | 372,871 | 381,450 |
| 69550 Memberships | - | - | - | - | - |
| 69600 Taxes | - | - | - | - | - |
| 69650 Awards | - | - | - | - | - |
| 69700 Miscellaneous Expenses | 106 | 500 | 500 | 106 | 500 |
| 69750 Prior Year Expense | - | - | - | - | - |
| 69800 Uncollectable Accounts Receivable | - | - | - | - | - |
| 89100 Principal Repayment | - | - | - | - | - |
| Sub-total Services & Supplies | \$ 409,216 | \$ 456,150 | \$ 456,150 | \$ 428,637 | \$ 456,150 |
| 77000 Capital Outlays | \$ - | \$ - | \$ - | \$ - | \$ - |
| 79050 Building Remodeling | \$ - | \$ - | \$ - | \$ - | \$ - |
| Total Expenditures | \$ 1,063,176 | \$ 1,061,802 | \$ 1,061,802 | \$ 1,065,559 | \$ 1,080,564 |
| * Estimates based on July 2013 through March 2014 actual expenditures and budget amendments. | | | | | |

MEDIA OFFICE

SAM ATWOOD MEDIA RELATIONS MANAGER

DESCRIPTION OF MAJOR SERVICES:

SCAQMD's Media Office serves as the agency's official liaison with news media in its many forms, including newspapers, radio, television, cable TV, online and social media. The Media Office also supports programs and policies of SCAQMD and its Board with a wide range of proactive media and public relations programs.

Services provided by the Media Office include phone, in-person and on-camera interviews with news media; production of media events; and the creation, production and distribution of news releases, media advisories, letters to the editor, op-eds, flyers, brochures and videos. The Media Office designs and executes major advertising and marketing initiatives with the assistance of outside contractors.

The Media Office also provides strategic counsel to the Executive Council and Executive Officer on media relations and building public awareness of air quality issues.

ACCOMPLISHMENTS:

RECENT:

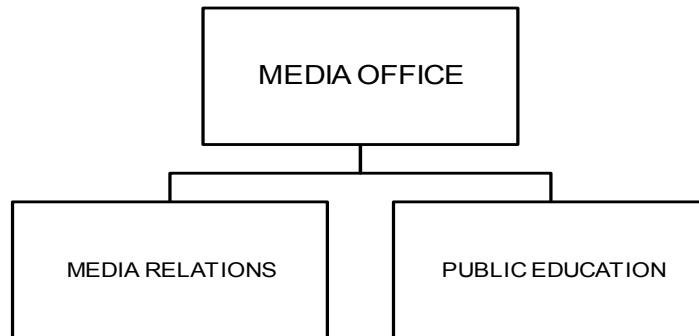
- Implemented Latino advertising and outreach initiative targeting Spanish-speaking and bilingual residents to increase awareness of SCAQMD, increase awareness of the Southland's air quality problem and solutions, and promote a call to action.
- Implemented second phase of TV partnership with local KABC-7 TV to promote summer and winter air quality messages to generate public interest in and support for air quality improvement programs.
- Implemented CBS radio and digital promotion to complement TV partnership with KABC-7 to increase awareness of and support for SCAQMD and its programs.
- Implemented an enhanced winter Check Before You Burn advertising and outreach campaign, including TV, radio, online and billboard ads, and live TV interviews, to help educate residents about the program and mandatory no-burn days.
- Supported SCAQMD programs and projects through ongoing outreach to media through press releases, media advisories, press events, opinion pieces and letters to the editor.
- Provided media relations services and strategic counsel for high-profile media issues through press releases, media advisories, in-person and on-camera interviews, and opinion pieces and letters to the editor.

ANTICIPATED:

- Support Lawn Mower Exchange program with enhanced advertising and outreach for the 2014 exchange program.

- Implement winter Check Before You Burn outreach campaign to educate media and public about the program and mandatory no-burn days.
- Support SCAQMD programs and projects through ongoing outreach to media through press releases, media advisories, press events, opinion pieces and letters to the editor.
- Provide media relations services and strategic counsel for high-profile media issues through press releases, media advisories, in-person and on-camera interviews, and opinion pieces and letters to the editor.

ORGANIZATIONAL CHART:



POSITION SUMMARY: 3 FTEs

| Unit | Current (FY 2013-14) | Changes | Proposed (FY 2014-15) |
|----------------------------------|----------------------|---------|-----------------------|
| Media Relations/Public Education | 3 | -- | 3 |

STAFFING DETAIL:

2014-15 Requested Staffing

| <u>Position</u> | <u>Title</u> |
|-----------------|--------------------------------------|
| 1 | Community Relations Manager |
| 1 | Secretary |
| <u>1</u> | Senior Public Information Specialist |
| 3 | Total Requested Positions |

| Media Office Work Program by Office | | | | | | | | |
|--|--------------|------------------|---------------------|----------------|------------------------------------|------------|------------|--------------------|
| # | Program Code | Program Category | Goal | Program | Activities | FY 2013-14 | FY 2014-15 | Revenue Categories |
| 1 | 20 | 494 | Policy Support | Outreach/Media | Edits, Brds., Talk shows, Commercl | 2.96 | 2.96 | 1a, IX |
| 2 | 20 | 855 | Operational Support | Web Tasks | Create/edit/review web content | 0.04 | 0.04 | 1a |

| | |
|--------------|------|
| Total | |
| 3.00 | 0.00 |
| 3.00 | |

| Media Office Line Item Expenditure | | | | | |
|--|-----------------------|---------------------------------|---------------------------------|--------------------------|------------------------|
| Major Object / Account # / Account Description | FY 2012-13 Actuals | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2013-14 Estimate * | FY 2014-15 Proposed |
| Salary & Employee Benefits | | | | | |
| 51000-52000 Salaries | \$ 279,372 | \$ 256,156 | \$ 256,155 | \$ 284,177 | \$ 264,030 |
| 53000-55000 Employee Benefits | 144,789 | 136,375 | 136,375 | 143,642 | 125,195 |
| Sub-total Salary & Employee Benefits | \$ 424,161 | \$ 392,531 | \$ 392,530 | \$ 427,819 | \$ 389,225 |
| Services & Supplies | | | | | |
| 67250 Insurance | \$ - | \$ - | \$ - | \$ - | \$ - |
| 67300 Rents & Leases Equipment | - | 1,500 | 1,500 | - | 500 |
| 67350 Rents & Leases Structure | - | - | - | - | - |
| 67400 Household | - | - | - | - | - |
| 67450 Professional & Special Services | 827,443 | 26,000 | 26,000 | 26,000 | 29,000 |
| 67460 Temporary Agency Services | - | - | - | - | - |
| 67500 Public Notice & Advertising | - | - | - | - | - |
| 67550 Demurrage | - | - | - | - | - |
| 67600 Maintenance of Equipment | - | - | - | - | - |
| 67650 Building Maintenance | - | - | - | - | - |
| 67700 Auto Mileage | 620 | 1,000 | 1,000 | 931 | - |
| 67750 Auto Service | - | - | - | - | - |
| 67800 Travel | 404 | 3,000 | 3,000 | 3,000 | 2,000 |
| 67850 Utilities | - | - | - | - | - |
| 67900 Communications | 2,032 | 1,000 | 1,984 | 1,984 | - |
| 67950 Interest Expense | - | - | - | - | - |
| 68000 Clothing | - | - | - | - | - |
| 68050 Laboratory Supplies | - | - | - | - | - |
| 68060 Postage | 535 | 1,000 | 1,500 | 1,445 | - |
| 68100 Office Expense | 1,130 | 2,480 | 2,480 | 1,130 | 1,500 |
| 68200 Office Furniture | - | - | - | - | - |
| 68250 Subscriptions & Books | 1,389 | 2,000 | 2,000 | 1,545 | - |
| 68300 Small Tools, Instruments, Equipment | - | - | - | - | - |
| 68350 Film | - | - | - | - | - |
| 68400 Gas and Oil | - | - | - | - | - |
| 69500 Training/Conference/Tuition/ Board Exp. | - | 2,800 | 2,300 | - | 1,500 |
| 69550 Memberships | 700 | 1,500 | 1,500 | 1,150 | 750 |
| 69600 Taxes | - | - | - | - | - |
| 69650 Awards | - | - | - | - | - |
| 69700 Miscellaneous Expenses | 1,014 | 2,600 | 2,600 | 959 | - |
| 69750 Prior Year Expense | - | - | - | - | - |
| 69800 Uncollectable Accounts Receivable | - | - | - | - | - |
| 89100 Principal Repayment | - | - | - | - | - |
| Sub-total Services & Supplies | \$ 835,267 | \$ 44,880 | \$ 45,864 | \$ 38,144 | \$ 35,250 |
| 77000 Capital Outlays | \$ - | \$ - | \$ - | \$ - | \$ - |
| 79050 Building Remodeling | \$ - | \$ - | \$ - | \$ - | \$ - |
| Total Expenditures | \$ 1,259,428 | \$ 437,411 | \$ 438,394 | \$ 465,963 | \$ 424,475 |

* Estimates based on July 2013 through March 2014 actual expenditures and budget amendments.

LEGAL

KURT WIESE GENERAL COUNSEL

DESCRIPTION OF MAJOR SERVICES:

The General Counsel's office is responsible for advising the SCAQMD Board and staff on all legal matters and enforcing SCAQMD rules and state laws related to air pollution controls. Attorneys review and assist in the drafting of SCAQMD rules and regulations to ensure they are within the District's authority, and are written in a clear and enforceable manner. Attorneys ensure that all legal requirements for noticing, public workshop, CEQA analysis, and socioeconomic analysis of proposed rules are satisfied.

The General Counsel's Office is also responsible for representing the SCAQMD Board and staff in court proceedings and administrative hearings related to matters arising out of staff's performance of official duties as SCAQMD officers and employees.

The Office is responsible for the enforcement of all SCAQMD rules and regulations and applicable state law. In addition, staff attorneys represent the Executive Officer in all matters before the SCAQMD Hearing Board, including variances, permit appeals, and abatement orders. Staff investigators support civil penalty and Hearing Board litigation.

ACCOMPLISHMENTS:

RECENT:

- Won California Supreme Court case holding that air districts may adopt technology forcing rules where it is reasonably anticipated the technology will be available by the time required. Defeated legal challenges to SCAQMD rules requiring the Gas Company to monitor gas quality, and Rule 1143 (VOC content of paint thinners).
- Provided legal advice including responses to comments on all legal issues concerning the 2012 AQMP, the Port Backstop Measure, and EPA's disapproval of AQMD's transportation control measures in ozone plans, and EPA's requirement to develop new 1-hour ozone SIP (State Implementation Plan).
- Provided legal advice on all issues related to permitting, including the reactivation of the restart of power plant boilers at Huntington Beach to prevent blackouts associated with the San Onofre Nuclear Generating Station being taken off line.
- Initiated and implemented a pilot project providing for the filing of enforcement cases in Small Claims Courts. The program allows small business to have their "day in court" without having to incur the expense of retaining counsel. The program also increases

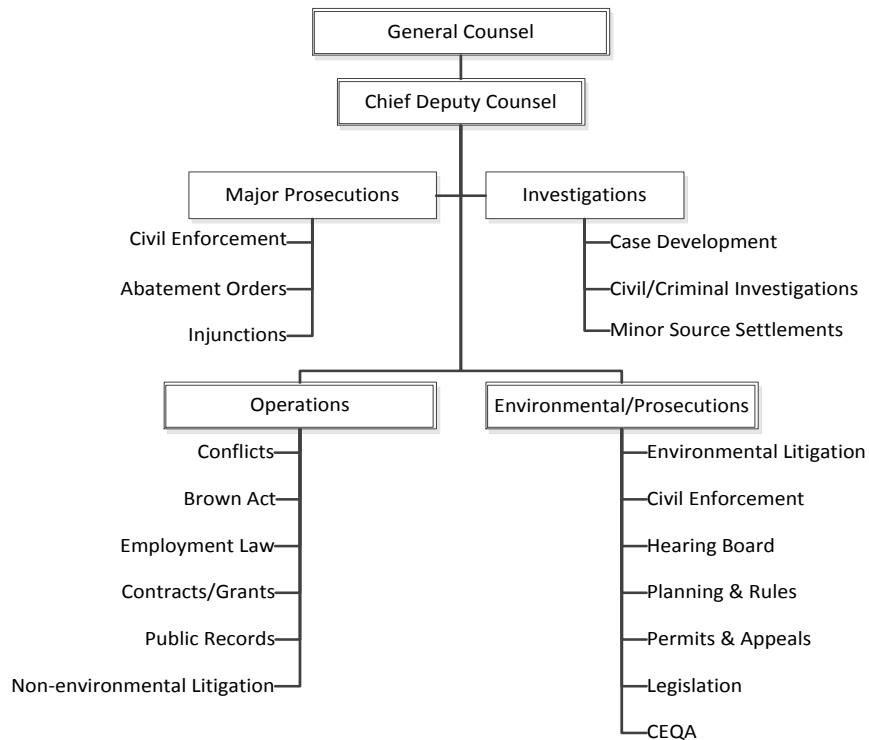
office efficiencies by avoiding having to assign these small penalty cases to an attorney for filing in Superior Court.

- The Office worked with Engineering staff and counsel for Southern California Edison to resolve a problem involving the manual manipulation of the Continuous Emissions Monitoring system at SCE’s facility on Catalina Island.

ANTICIPATED:

- Develop high impact enforcement cases to maximize deterrence for air pollution violations.
- Implement training programs to broaden staff knowledge of and ability to handle all types of work handled by the office.
- Provide legal advice concerning the District’s priority projects such as adopting rules relating to lead emissions from battery recycling facilities and requiring fees for use of certain offset exemptions and the use of offsets from the District’s internal accounts.

ORGANIZATIONAL CHART:



POSITION SUMMARY: 32 FTEs

| Unit | Current (FY 2013-14) | Changes | Proposed (FY 2014-15) |
|-----------------------|-------------------------|---------|--------------------------|
| Office Administration | 4 | 0 | 4 |
| General Counsel | 22 | 0 | 22 |
| Investigations | 6 | 0 | 6 |
| Total | 32 | 0 | 32 |

STAFFING DETAIL:

2014-15 Requested Staffing

| <u>Position</u> | <u>Title</u> |
|-----------------|---|
| 4 | Administrative Secretary/Legal |
| 1 | Assistant Chief Deputy – Major Prosecutions |
| 1 | Chief Deputy Counsel |
| 1 | General Counsel |
| 1 | Investigations Manager |
| 4 | Investigator |
| 3 | Legal Secretary |
| 1 | Office Assistant |
| 1 | Paralegal |
| 4 | Principal Deputy District Counsel |
| 8 | Senior Deputy District Counsel |
| 1 | Senior Office Assistant |
| 1 | Senior Paralegal |
| <u>1</u> | Supervising Investigator |
| 32 | Total Requested Positions |

**Legal
Work Program by Office**

| # | Program Code | Program Category | Goal | Program | Activities | FTEs +/- | | Revenue Categories |
|----|--------------|------------------|--|-------------------------------|---|------------|------------|--------------------|
| | | | | | | FY 2013-14 | FY 2014-15 | |
| 1 | 08 | 001 | Advance Clean Air Technology | AB2766/Mob Src/Legal Advice | AB2766 Leg Adv: Trans/Mob Source | 0.05 | 0.05 | IX |
| 2 | 08 | 003 | Advance Clean Air Technology | AB2766/MSRC | Legal Advice: MSRC Prog Admin | 0.10 | 0.05 | IX |
| 3 | 08 | 009 | Develop Programs | AB 1318 Mitigation | AB 1318 Projects Adm/Impl | 0.05 | 0.05 | XVII |
| 4 | 08 | 010 | Develop Programs | AQMP | AQMP Revision/CEQA Review | 0.10 | 0.10 | IV,IX |
| 5 | 08 | 025 | Operational Support | Admin/SCAQMD-Legal Research | Legal Research/Staff/Exec Mgmt | 1.25 | 1.25 | 1a |
| 6 | 08 | 038 | Operational Support | Admin/Office Management | Attorney Timekeeping/Perf Eval | 2.75 | 0.75 | 1b |
| 7 | 08 | 071 | Operational Support | Arch Ctgs - Admin | Rule Dev/TA/Reinterpretations | 1.40 | 1.40 | XVIII |
| 8 | 08 | 072 | Ensure Compliance | Arch Ctgs - End User | Case Dispo/Rvw, Track, Prep NOVs | 0.05 | 0.05 | XVIII |
| 9 | 08 | 073 | Ensure Compliance | Arch Ctgs - Other | Case Dispo/Rvw, Track, Prep NOVs | 0.50 | (0.30) | XVIII |
| 10 | 08 | 102 | Operational Support | CEQA Document Projects | CEQA Review | 0.75 | 0.25 | II,III,IX |
| 11 | 08 | 115 | Ensure Compliance | Case Disposition | Trial/Dispo-Civil Case/Injunct | 6.00 | 6.00 | II,IV,VII,XV |
| 12 | 08 | 131 | Advance Clean Air Technology | Clean Fuels/Legal Advice | Legal Advice: Clean Fuels | 0.05 | 0.05 | VIII |
| 13 | 08 | 154 | Ensure Compliance | Compliance/NOV Administration | Review/Track/Prep NOVs/MSAs | 1.20 | 1.20 | IV |
| 14 | 08 | 185 | Ensure Compliance | Database Management | Support IM/Dev Tracking System | 0.20 | 0.20 | IV |
| 15 | 08 | 227 | Operational Support | Employee/Employment Law | Legal Advice: Employment Law | 1.00 | 1.00 | 1a |
| 16 | 08 | 275 | Operational Support | Governing Board | Legal Advice:Attend Board/Cmte Mtgs | 1.00 | 1.00 | 1a |
| 17 | 08 | 366 | Ensure Compliance | Hearing Board/Legal | Hear/Disp-Variant/Appeal/Rev | 2.80 | 2.80 | IV |
| 18 | 08 | 380 | Ensure Compliance | Interagency Coordination | Coordinate with Other Agencies | 0.25 | 0.25 | II,V |
| 19 | 08 | 401 | Operational Support | Legal Advice/SCAQMD Programs | General Advice: Contracts | 2.50 | (0.50) | 1a |
| 20 | 08 | 402 | Ensure Compliance | Legal Advice/Legislation | Legal Support/Rep on Legal Matter | 0.25 | (0.15) | 1a |
| 21 | 08 | 403 | Ensure Compliance | Legal Rep/Litigation | Prep/Hearing/Disposition | 3.60 | (0.10) | 1a,II |
| 22 | 08 | 404 | Customer Service and Business Assistance | Legal Rep/Legislation | Draft Legis/SCAQMD Position/Mtgs | 0.05 | 0.05 | II,IX |
| 23 | 08 | 416 | Policy Support | Legislative Activities | Lobbying:Supp/Promote/influence Legis/Adm | 0.10 | 0.10 | 1a |
| 24 | 08 | 457 | Advance Clean Air Technology | Mob Src/C Moyer/Leg Advice | Moyer/Implem/Program Dev | 0.20 | 0.20 | IX |
| 25 | 08 | 465 | Ensure Compliance | Mutual Settlement | Mutual Settlement Program | 3.00 | 3.00 | IV |
| 26 | 08 | 516 | Timely Review of Permits | Permit Processing/Legal | Legal Advice: Permit Processing | 0.25 | (0.10) | III |
| 27 | 08 | 565 | Customer Service and Business Assistance | Public Records Act | Comply w/ Public Rec Requests | 0.50 | 0.50 | 1a |
| 28 | 08 | 651 | Develop Rules | Rules/Legal Advice | Legal Advice: Rules/Draft Regs | 0.75 | 0.25 | II |
| 29 | 08 | 661 | Develop Rules | Rulmaking/RECLAIM | RECLAIM Legal Adv/Related Iss | 0.10 | (0.05) | II |
| 30 | 08 | 681 | Customer Service and Business Assistance | Small Business/Legal Advice | Legal Advice: SB/Fee Review | 0.10 | (0.05) | II,III |
| 31 | 08 | 717 | Policy Support | Student Interns | Gov Board/Student Intern Program | 0.30 | (0.10) | 1a |
| 32 | 08 | 770 | Ensure Compliance | Title V | Leg Advice: Title V Prog/Perm Dev | 0.05 | 0.05 | II,IV |
| 33 | 08 | 772 | Timely Review of Permits | Title V Permits | Leg Advice: New Source Title V Permit | 0.10 | (0.05) | III |
| 34 | 08 | 791 | Ensure Compliance | Toxics/AB2588 | AB2588 Legal Advice: Plan & Impl | 0.05 | 0.05 | X |
| 35 | 08 | 805 | Ensure Compliance | Training | Continuing Education/Training | 0.50 | 0.50 | 1b |
| 36 | 08 | 825 | Operational Support | Union Negotiations | Legal Adv: Union Negotiations | 0.05 | 0.05 | 1a |
| 37 | 08 | 826 | Operational Support | Union Steward Activities | Rep Employees in Grievance Act | 0.05 | 0.05 | 1a |

| | | | |
|--------------|-------|------|-------|
| Total | 32.00 | 0.00 | 32.00 |
|--------------|-------|------|-------|

| Legal Line Item Expenditure | | | | | |
|--|-----------------------|---------------------------------|---------------------------------|--------------------------|------------------------|
| Major Object / Account # / Account Description | FY 2012-13 Actuals | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2013-14 Estimate * | FY 2014-15 Proposed |
| Salary & Employee Benefits | | | | | |
| 51000-52000 Salaries | \$ 3,566,816 | \$ 3,580,825 | \$ 3,580,825 | \$ 3,524,083 | \$ 3,560,762 |
| 53000-55000 Employee Benefits | 1,786,985 | 1,888,659 | 1,888,659 | 1,840,274 | 1,911,932 |
| Sub-total Salary & Employee Benefits | \$ 5,353,801 | \$ 5,469,485 | \$ 5,469,484 | \$ 5,364,357 | \$ 5,472,694 |
| Services & Supplies | | | | | |
| 67250 Insurance | \$ - | \$ - | \$ - | \$ - | \$ - |
| 67300 Rents & Leases Equipment | - | - | - | - | - |
| 67350 Rents & Leases Structure | - | - | - | - | - |
| 67400 Household | - | - | - | - | - |
| 67450 Professional & Special Services | 318,674 | 249,500 | 797,500 | 1,197,500 | 279,500 |
| 67460 Temporary Agency Services | 62,439 | 35,000 | 40,000 | 35,000 | 15,000 |
| 67500 Public Notice & Advertising | - | 10,000 | 3,500 | - | 8,000 |
| 67550 Demurrage | 1,207 | 4,000 | 4,000 | 4,000 | 10,000 |
| 67600 Maintenance of Equipment | - | 300 | 300 | - | 300 |
| 67650 Building Maintenance | - | - | - | - | - |
| 67700 Auto Mileage | 795 | 1,600 | 1,600 | 795 | 1,600 |
| 67750 Auto Service | - | - | - | - | - |
| 67800 Travel | 10,822 | 15,000 | 13,000 | 12,292 | 15,000 |
| 67850 Utilities | - | - | - | - | - |
| 67900 Communications | 2,716 | 10,300 | 10,300 | 3,470 | 10,300 |
| 67950 Interest Expense | - | - | - | - | - |
| 68000 Clothing | - | 250 | 250 | 250 | 250 |
| 68050 Laboratory Supplies | - | - | - | - | - |
| 68060 Postage | 4,395 | 4,750 | 4,750 | 4,395 | 4,750 |
| 68100 Office Expense | 10,035 | 9,520 | 8,320 | 9,081 | 9,520 |
| 68200 Office Furniture | - | - | - | - | - |
| 68250 Subscriptions & Books | 91,379 | 95,000 | 95,000 | 95,000 | 100,000 |
| 68300 Small Tools, Instruments, Equipment | - | - | - | - | - |
| 68350 Film | - | - | - | - | - |
| 68400 Gas and Oil | - | - | - | - | - |
| 69500 Training/Conference/Tuition/ Board Exp. | 25,340 | 15,000 | 17,000 | 17,000 | 25,000 |
| 69550 Memberships | 700 | 750 | 1,950 | 750 | 750 |
| 69600 Taxes | - | - | - | - | - |
| 69650 Awards | - | - | - | - | - |
| 69700 Miscellaneous Expenses | 1,139 | - | 1,500 | 1,488 | 1,000 |
| 69750 Prior Year Expense | - | - | - | - | - |
| 69800 Uncollectable Accounts Receivable | - | - | - | - | - |
| 89100 Principal Repayment | - | - | - | - | - |
| Sub-total Services & Supplies | \$ 529,640 | \$ 450,970 | \$ 998,970 | \$ 1,381,022 | \$ 480,970 |
| 77000 Capital Outlays | \$ - | \$ - | \$ - | \$ - | \$ - |
| 79050 Building Remodeling | \$ - | \$ - | \$ - | \$ - | \$ - |
| Total Expenditures | \$ 5,883,442 | \$ 5,920,455 | \$ 6,468,454 | \$ 6,745,379 | \$ 5,953,664 |

* Estimates based on July 2013 through March 2014 actual expenditures and budget amendments.



**SOUTH COAST
AIR QUALITY MANAGEMENT DISTRICT**

FINANCE

MICHAEL B. O'KELLY
CHIEF FINANCIAL OFFICER; DEPUTY EXECUTIVE OFFICER

DESCRIPTION OF MAJOR SERVICES:

The Finance office provides services to internal and external customers and stakeholders, including fee payers, other divisions, employees, the Mobile Source Air Pollution Reduction Review Committee, the Building Corporation, and the Brain and Lung Tumor and Air Pollution Foundation. These services are provided through three distinct sections: Controller, Financial Services, and Procurement. The Controller is responsible for accounting, financial reporting, accounts payable, payroll, state and federal tax reporting, revenue posting, and asset management. The Financial Services Manager is responsible for budget preparation, budgetary reporting, forecasting, grants management, billing services, and ad-hoc internal financial support. The Procurement Manager is responsible for the procurement of goods and services, contracting, proposal/bid solicitations and advertising, processing supplier deliveries, and controlling/dispensing/reconciling inventory.

ACCOMPLISHMENTS:

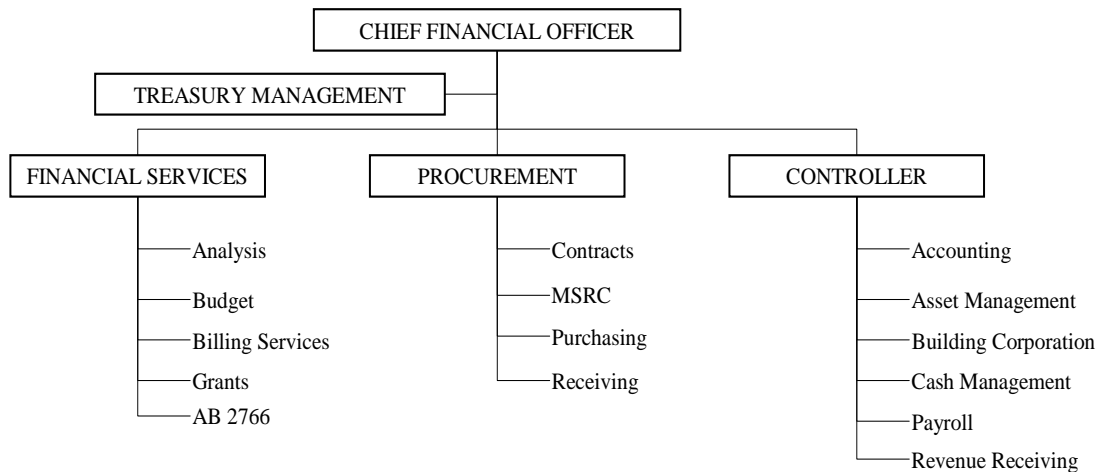
RECENT:

- Implemented expanded electronic fee payment options, including online credit card and no fee e-check options, to make paying SCAQMD fees more convenient for the fee payer.
- Proposed the first annual budget since FY 2001-02 that was balanced without the use of prior-year revenues or fund balance.
- Completed the biannual audit of AB 2766 revenues for FY's 2009-10 and 2010-11, including reviewing 54 AB 2766 recipients.
- Processed 1,116 contracts and modifications, issued 45 Request for Proposals/Quotes, and processed 1,443 proposals/quotations.
- Received the Government Finance Officer's Association's (GFOA) awards for the Annual Budget, Comprehensive Annual Financial Report (CAFR), and Popular Annual Financial Report (PAFR) for the most recent fiscal year.

ANTICIPATED:

- Complete the implementation of Public Employee Pension Reform Act changes into the payroll system through coordination with other SCAQMD divisions and San Bernardino County Employees’ Retirement Association.
- Monitor the changing investment yield environment for allowable investments to ensure SCAQMD’s investments continue to earn a market rate of return while maintaining safety and liquidity.
- Continue to receive GFOA Awards for the Annual Budget, CAFR, and PAFR to ensure SCAQMD’s financial reports meet the highest professional standards.
- Perform additional cost analysis to determine if various fees are sufficient to cover the activities for which they are collected.

ORGANIZATIONAL CHART:



POSITION SUMMARY: 45 FTEs

| Unit | Current (FY 2013-14) | Changes | Proposed (FY 2014-15) |
|-----------------------|-------------------------|----------|--------------------------|
| Office Administration | 3 | - | 3 |
| Financial Services | 13 | - | 13 |
| Procurement | 9 | - | 9 |
| Controller | 19 | 1 | 20 |
| Total | 44 | 1 | 45 |

The FTE proposed to be added for FY 2014-15 is for a Supervising Payroll Technician and will allow for training by the current Supervising Payroll Technician prior to retiring in March 2015. The FTE will be deleted in FY 2015-16.

STAFFING DETAIL:

2014-15 Requested Staffing

| <u>Position</u> | <u>Title</u> |
|-----------------|---------------------------------|
| 2 | Accounting Technician |
| 1 | Chief Financial Officer |
| 2 | Contracts Assistant |
| 1 | Controller |
| 1 | District Storekeeper |
| 3 | Financial Analyst |
| 1 | Financial Services Manager |
| 6 | Fiscal Assistant |
| 2 | Payroll Technician |
| 1 | Procurement Manager |
| 1 | Purchasing Assistant |
| 1 | Purchasing Supervisor |
| 2 | Secretary |
| 3 | Senior Accountant |
| 1 | Senior Administrative Secretary |
| 2 | Senior Fiscal Assistant |
| 9 | Senior Office Assistant |
| 1 | Staff Assistant |
| 1 | Staff Specialist |
| 1 | Stock Clerk |
| 1 | Supervising Office Assistant |
| <u>2</u> | Supervising Payroll Technician |
| 45 | Total Requested Positions |

**Finance
Work Program by Office**

| # | Program Code | Program Category | Goal | Program | Activities | FTEs +/- | | Revenue Categories |
|----|--------------|--|------|--------------------------------|---|------------|------------|--------------------|
| | | | | | | FY 2013-14 | FY 2014-15 | |
| 1 | 04 002 | Customer Service and Business Assistance | III | AB2766/Mobile Source | Prog Admin: Monitor/Dist/Audit | 0.10 | 0.10 | IX |
| 2 | 04 003 | Advance Clean Air Technology | III | AB2766/MSRC | MSRC Program Administration | 0.35 | 0.35 | IX |
| 3 | 04 009 | Develop Programs | I | AB 1318 Mitigation | AB 1318 Projects Admin/Impl | 0.13 | 0.13 | XVII |
| 4 | 04 020 | Operational Support | III | Admin/SCAQMD Budget | Analyze/Prepare/Impl/Track WP | 2.50 | 2.50 | 1a |
| 5 | 04 021 | Operational Support | III | Admin/SCAQMD Contracts | Contract Admin/Monitor/Process | 3.20 | 3.20 | 1a |
| 6 | 04 023 | Operational Support | III | Admin/SCAQMD Capital Assets | FA Rep/Reconcile/Inv/Act | 0.70 | 0.70 | 1a |
| 7 | 04 038 | Operational Support | III | Admin/Office Management | Fin Mgmt/Oversee Activities | 3.00 | 3.00 | 1b |
| 8 | 04 045 | Operational Support | III | Admin/Office Budget | Office Budget/Prep/Impl/Track | 0.05 | 0.05 | 1b |
| 9 | 04 071 | Operational Support | I | Arch Cigs - Admin | Cost Analysis/Payments | 0.04 | 0.04 | XVIII |
| 10 | 04 083 | Policy Support | II | Brain Tumor & Air Poll Foundat | Brain Tumor & Air Poll Foundation Support | 0.02 | 0.02 | 1a |
| 11 | 04 085 | Operational Support | III | Building Corporation | Building Corp Actt/Fin Reports | 0.02 | 0.02 | 1a |
| 12 | 04 130 | Advance Clean Air Technology | III | Clean Fuels/Contract Admin | Clean Fuels Contract Admin/Monitor | 0.15 | 0.15 | VIII |
| 13 | 04 170 | Customer Service and Business Assistance | I | Billing Services | Answer/Resp/Resolv Prob & Inq | 8.00 | 8.00 | II,III,IV |
| 14 | 04 233 | Operational Support | III | Employee Relations | Assist HR/Interpret Salary Res | 0.10 | 0.10 | 1a |
| 15 | 04 260 | Customer Service and Business Assistance | III | Fee Review | Cnte Mig/Fee-Related Complaint | 0.10 | 0.10 | II,III,IV,XV |
| 16 | 04 265 | Operational Support | III | Financial Mgmt/Accounting | Record Accts Rec & Pay/Rpts | 6.20 | 6.20 | 1a |
| 17 | 04 266 | Operational Support | III | Financial Mgmt/Fin Analysis | Fin/SCAQMD Sta Analtis & Audit | 0.80 | 0.80 | 1a |
| 18 | 04 267 | Operational Support | III | Financial Mgmt/Treasury Mgmt | Treas Mgt Anlyz/Trk/Proj/Invst | 0.90 | 0.90 | 1a |
| 19 | 04 268 | Operational Support | III | Financial Systems | CLASS/Rev/Actt/PR/Sys Analyze | 0.10 | 0.10 | 1a |
| 20 | 04 355 | Customer Service and Business Assistance | III | Grants Management | Grant Anlyz/Eval/Negot/Acc/Rpt | 1.00 | 1.00 | IV,V |
| 21 | 04 447 | Operational Support | I | Mobile Sources/Accounting | Record Acct Rec & Pay/Special Funds | 0.65 | 0.65 | IX |
| 22 | 04 457 | Advance Clean Air Technology | III | Mobile Source/Moyer Adm | Carl Moyer: Contract/Fin Admin | 1.02 | 1.02 | IX |
| 23 | 04 493 | Operational Support | II | Outreach/SB/MB/DVBE | Outreach/Incr SB/DVBE Partic | 0.05 | 0.05 | 1a |
| 24 | 04 510 | Operational Support | III | Payroll | Ded/Ret Rpts/PR/St & Fed Rpts | 3.60 | 1.00 | 1a |
| 25 | 04 542 | Advance Clean Air Technology | I | Prop 1B:Goods Movement | Contracts/Finance Admin | 0.50 | 0.50 | IX |
| 26 | 04 544 | Advance Clean Air Technology | I | Prop 1B:Low Emiss Sch Bus | Grants/Finance Admin | 0.05 | 0.05 | IX |
| 27 | 04 565 | Customer Service and Business Assistance | I | Public Records Act | Comply w/ Public Rec Requests | 0.02 | 0.02 | 1a |
| 28 | 04 570 | Operational Support | III | Purchasing | Purch/Track Svcs & Supplies | 2.50 | 2.50 | 1a |
| 29 | 04 571 | Operational Support | III | Purchasing/Receiving | Receive/Record SCAQMD Purchases | 1.20 | 1.20 | 1a |
| 30 | 04 572 | Operational Support | III | Purchasing-Receiving/Stockroom | Track/Monitor SCAQMD Supplies | 1.00 | 1.00 | 1a |
| 31 | 04 630 | Operational Support | III | Cash Mgmt/Revenue Receiving | Receive/Post Pymts/Reconcile | 5.25 | 5.25 | II,III,IV,XI |
| 32 | 04 631 | Customer Service and Business Assistance | III | Cash Mgmt/Refunds | Research/Doc/P rep/Proc Refunds | 0.30 | 0.30 | III,IV,XI |
| 33 | 04 791 | Ensure Compliance | III | Toxics/AB2588 | AB2588 Toxics HS Fee Collection | 0.15 | 0.15 | X |
| 34 | 04 805 | Operational Support | III | Training | Continuing Education/Training | 0.20 | 0.20 | 1b |
| 35 | 04 825 | Operational Support | III | Union Negotiations | Official Labor/Mgmt Negotiate | 0.02 | 0.02 | 1a |
| 36 | 04 826 | Operational Support | III | Union Steward Activities | Rep Employees in Grievance Act | 0.01 | 0.01 | 1a |
| 37 | 04 855 | Operational Support | II | Web Tasks | Create/edit/review web content | 0.02 | 0.02 | 1a |

| | | | |
|--------------|-------|------|-------|
| Total | 44.00 | 1.00 | 45.00 |
|--------------|-------|------|-------|

| Finance | | | | | | |
|--|---|---------------------------------|---------------------------------|--------------------------|------------------------|--------------|
| Line Item Expenditure | | | | | | |
| Major Object / Account # / Account Description | FY 2012-13 Actuals | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2013-14 Estimate * | FY 2014-15 Proposed | |
| Salary & Employee Benefits | | | | | | |
| 51000-52000 | Salaries | \$ 3,019,888 | \$ 2,879,385 | \$ 2,879,385 | \$ 3,131,055 | \$ 3,041,031 |
| 53000-55000 | Employee Benefits | 1,782,032 | 1,759,545 | 1,759,545 | 1,843,777 | 1,883,972 |
| Sub-total Salary & Employee Benefits | | \$ 4,801,920 | \$ 4,638,930 | \$ 4,638,930 | \$ 4,974,832 | \$ 4,925,003 |
| Services & Supplies | | | | | | |
| 67250 | Insurance | \$ - | \$ - | \$ - | \$ - | \$ - |
| 67300 | Rents & Leases Equipment | - | - | - | - | - |
| 67350 | Rents & Leases Structure | - | - | - | - | - |
| 67400 | Household | - | 900 | 900 | 900 | 900 |
| 67450 | Professional & Special Services | 130,278 | 157,000 | 157,000 | 147,987 | 148,500 |
| 67460 | Temporary Agency Services | 50,837 | 55,000 | 55,000 | 27,713 | 58,315 |
| 67500 | Public Notice & Advertising | 6,003 | 6,500 | 6,500 | 6,500 | 6,500 |
| 67550 | Demurrage | 1,025 | 900 | 900 | 854 | 780 |
| 67600 | Maintenance of Equipment | 778 | 950 | 950 | 948 | 1,070 |
| 67650 | Building Maintenance | - | - | - | - | - |
| 67700 | Auto Mileage | 1,717 | 1,483 | 3,883 | 1,883 | 1,483 |
| 67750 | Auto Service | - | - | - | - | - |
| 67800 | Travel | 3,102 | 6,000 | 6,000 | 4,652 | 6,000 |
| 67850 | Utilities | - | - | - | - | - |
| 67900 | Communications | 1,072 | 9,000 | 9,000 | 1,203 | 9,000 |
| 67950 | Interest Expense | - | - | - | - | - |
| 68000 | Clothing | 1,126 | 1,200 | 1,200 | 1,126 | 1,200 |
| 68050 | Laboratory Supplies | - | - | - | - | - |
| 68060 | Postage | 92,544 | 130,350 | 130,350 | 97,187 | 130,350 |
| 68100 | Office Expense | 21,165 | 35,920 | 33,520 | 25,304 | 35,920 |
| 68200 | Office Furniture | - | - | - | - | - |
| 68250 | Subscriptions & Books | 2,723 | 3,160 | 3,160 | 2,632 | 3,160 |
| 68300 | Small Tools, Instruments, Equipment | - | - | - | - | - |
| 68350 | Film | - | - | - | - | - |
| 68400 | Gas and Oil | - | - | - | - | - |
| 69500 | Training/Conference/Tuition/ Board Exp. | 6,352 | 26,250 | 26,250 | 10,863 | 26,250 |
| 69550 | Memberships | 2,197 | 2,190 | 2,190 | 2,190 | 2,375 |
| 69600 | Taxes | - | - | - | - | - |
| 69650 | Awards | - | - | - | - | - |
| 69700 | Miscellaneous Expenses | 3,256 | 4,125 | 4,125 | 4,125 | 4,125 |
| 69750 | Prior Year Expense | - | - | - | - | - |
| 69800 | Uncollectable Accounts Receivable | - | - | - | - | - |
| 89100 | Principal Repayment | - | - | - | - | - |
| Sub-total Services & Supplies | | \$ 324,175 | \$ 440,928 | \$ 440,928 | \$ 336,067 | \$ 435,928 |
| 77000 | Capital Outlays | \$ - | \$ - | \$ - | \$ - | \$ - |
| 79050 | Building Remodeling | \$ - | \$ - | \$ - | \$ - | \$ - |
| Total Expenditures | | \$ 5,126,095 | \$ 5,079,858 | \$ 5,079,858 | \$ 5,310,899 | \$ 5,360,931 |

* Estimates based on July 2013 through March 2014 actual expenditures and budget amendments.



**SOUTH COAST
AIR QUALITY MANAGEMENT DISTRICT**

ADMINISTRATIVE & HUMAN RESOURCES

**WILLIAM JOHNSON
ASSISTANT DEPUTY EXECUTIVE OFFICER**

DESCRIPTION OF MAJOR SERVICES:

Administrative and Human Resources consists of 3 sections: Human Resources, Business Services and Building Services. Human Resources is responsible for administering the full range of personnel and employee relations programs to maximize hiring, retention, and development of highly-qualified employees necessary to meet SCAQMD's air quality goals. Business Services oversees the management of the SCAQMD headquarters facility, the maintenance of vehicles, and Print Shop services, including maintenance of walk-up copiers. This section also coordinates and handles SCAQMD's subscription services and incoming and outgoing mail. Building Services is responsible for maintenance and repairs of the SCAQMD headquarters buildings and building equipment, childcare center, field offices, air monitoring stations, meteorological stations, and landscape maintenance. Building Services is also responsible for repairs of kitchen equipment, restroom fixtures, construction projects, roof repairs, temperature control, and performing preventative maintenance on all SCAQMD equipment.

ACCOMPLISHMENTS:

RECENT:

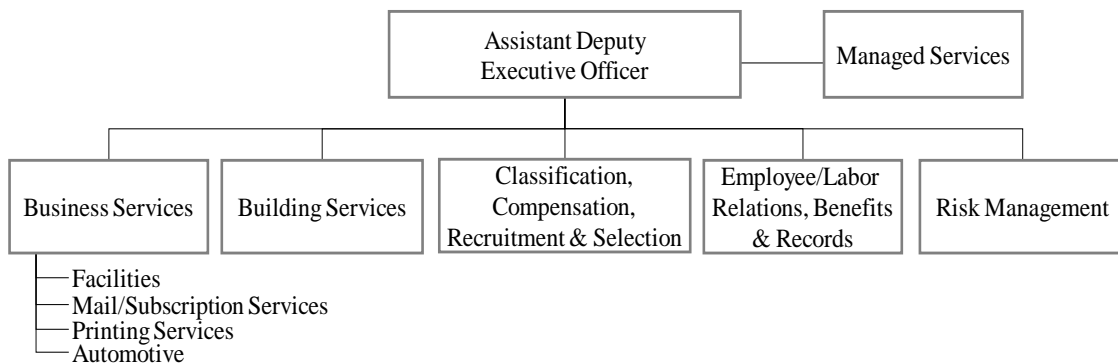
- Implemented and administered effective human resources and administrative support programs that further SCAQMD goals and objectives and conform to best business practices.
- Provided support and direction to management and staff with respect to adherence to relevant state and federal laws and SCAQMD policies, procedures and memoranda of understanding.
- Negotiated, interpreted and administered MOUs with three bargaining groups.
- Established an Employee Assistance Program for SCAQMD's workforce.
- Continued to ensure personalized workspace evaluations to reduce/eliminate ergonomic risks.

ANTICIPATED:

- Continue to provide support and direction to management and staff with respect to adherence to relevant state and federal laws and SCAQMD policies, procedures and memoranda of understanding.
- Continue negotiating for a favorable successor MOU with the Technical & Enforcement, and Office Clerical & Maintenance bargaining units.

- Formalize Succession Planning model utilizing internal and/or external resources.
- Evaluate and plan for significant turnover of vehicle fleet due to CNG tank expiration.
- Assist the Science and Technology Advancement (STA) Office with establishing an electrical vehicle (EV) charging plaza, including design and implementation of the necessary charging station locations.

ORGANIZATIONAL CHART:



POSITION SUMMARY: 34 FTEs

| Unit | Current (FY 13-14) | Changes | Proposed (FY 14-15) |
|---|--------------------|----------|---------------------|
| Office Administration | 2 | - | 2 |
| Business Services | 15 | - | 15 |
| Building Services | 7 | - | 7 |
| Classification, Compensation, Recruitment & Selection | 5 | - | 5 |
| Employee/Labor Relations, Benefits & Records | 3 | - | 3 |
| Risk Management | 2 | - | 2 |
| Total | 34 | - | 34 |

STAFFING DETAIL:

2014-15 Requested Staffing

| <u>Position</u> | <u>Title</u> |
|-----------------|---|
| 1 | Assistant Deputy Executive Officer/Administrative & Human Resources |
| 1 | Building Maintenance Manager |
| 1 | Building Supervisor |
| 1 | Business Services Manager |
| 1 | Facilities Services Technician |
| 1 | Fleet Services Supervisor |
| 2 | Fleet Services Worker II |
| 4 | General Maintenance Worker |
| 4 | Human Resources Analyst |
| 2 | Human Resources Manager |
| 1 | Human Resources Technician |
| 3 | Mail Subscription Services Clerk |
| 1 | Mail Subscription Services Supervisor |
| 2 | Office Assistant |
| 1 | Offset Press Operator |
| 2 | Print Shop Duplicator |
| 1 | Print Shop Supervisor |
| 1 | Risk Manager |
| 2 | Secretary |
| 1 | Senior Administrative Secretary |
| <u>1</u> | Staff Specialist |
| 34 | Total Requested Positions |

**Administrative & Human Resources
Work Program by Office**

| # | Program Code | Program Category | Goal | Program | Activities | FTEs +/- | | Revenue Categories | |
|----|--------------|------------------|--|---------|------------------------------|-----------------------------------|------------|--------------------|----|
| | | | | | | FY 2013-14 | FY 2014-15 | | |
| 1 | 16 | 026 | Operational Support | III | SCAQMD Mail | Posting/Mailing/Delivery | 2.30 | 2.30 | 1a |
| 2 | 16 | 038 | Operational Support | III | Admin/Office Management | Reports/Proj/Budget/Contracts | 2.05 | 2.05 | 1b |
| 3 | 16 | 060 | Operational Support | III | Equal Employment Opportunity | Program Dev/Monitor/Reporting | 0.10 | 0.10 | 1a |
| 4 | 16 | 080 | Ensure Compliance | III | Auto Services | Vehicle/Radio Repair & Maint | 3.00 | 3.00 | 1a |
| 5 | 16 | 090 | Operational Support | III | Building Maintenance | Repairs & Preventative Maint | 7.00 | 7.00 | 1a |
| 6 | 16 | 092 | Operational Support | III | Business Services | Building Services Admin/Contracts | 2.40 | 2.40 | 1a |
| 7 | 16 | 225 | Operational Support | III | Employee Benefits | Benefits Analysis/Orient/Records | 1.40 | 1.40 | 1a |
| 8 | 16 | 226 | Operational Support | III | Classification & Pay | Class & Salary Studies | 0.30 | 0.30 | 1a |
| 9 | 16 | 228 | Operational Support | III | Recruitment & Selection | Recruit Candidates for SCAQMD | 3.25 | 3.25 | 1a |
| 10 | 16 | 232 | Operational Support | III | Position Control | Track Positions/Workforce Anlys | 0.40 | 0.55 | 1a |
| 11 | 16 | 233 | Operational Support | III | Employee Relations | Meet/Confer/Labor-Mgmt/Grievance | 2.70 | 2.70 | 1a |
| 12 | 16 | 255 | Operational Support | III | Facilities Services | Phones/Space/Keys/Audio-Visual | 1.00 | 1.00 | 1a |
| 13 | 16 | 457 | Advance Clean Air Technology | I | MS/Carl Moyer Admin | C Mover/Contractor Compliance | 1.00 | (0.50) | IX |
| 14 | 16 | 540 | Customer Service and Business Assistance | III | Print Shop | Printing/Collating/Binding | 4.00 | 4.00 | 1a |
| 15 | 16 | 542 | Advance Clean Air Technology | I | Prop 1B:Goods Movement | Prop 1B: Goods Movement | 0.00 | 0.50 | IX |
| 16 | 16 | 565 | Customer Service and Business Assistance | III | Public Records Act | Comply w/ Public Rec Requests | 0.20 | (0.15) | 1a |
| 17 | 16 | 640 | Operational Support | III | Risk Management | Lia bl/Property/Wk Comp/Selfins | 1.00 | 1.00 | 1a |
| 18 | 16 | 717 | Policy Support | II | Student Interns | Gov Board/Student Intern Program | 0.20 | 0.20 | 1a |
| 19 | 16 | 720 | Customer Service and Business Assistance | I | Subscription Services | Rule & Gov Board Materials | 1.70 | 1.70 | IV |

| | | | |
|--------------|-------|------|-------|
| Total | 34.00 | 0.00 | 34.00 |
|--------------|-------|------|-------|

| Administrative & Human Resources | | | | | | |
|--|---|---------------------------------|---------------------------------|--------------------------|------------------------|--------------|
| Line Item Expenditure | | | | | | |
| Major Object / Account # / Account Description | FY 2012-13 Actuals | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2013-14 Estimate * | FY 2014-15 Proposed | |
| Salary & Employee Benefits | | | | | | |
| 51000-52000 | Salaries | \$ 2,562,411 | \$ 2,431,136 | \$ 2,431,137 | \$ 2,506,073 | \$ 2,495,200 |
| 53000-55000 | Employee Benefits | 1,459,153 | 1,469,393 | 1,469,393 | 1,475,831 | 1,540,938 |
| Sub-total Salary & Employee Benefits | | \$ 4,021,564 | \$ 3,900,530 | \$ 3,900,530 | \$ 3,981,904 | \$ 4,036,137 |
| Services & Supplies | | | | | | |
| 67250 | Insurance | \$ - | \$ - | \$ - | \$ - | \$ - |
| 67300 | Rents & Leases Equipment | 93,534 | 91,600 | 91,600 | 91,600 | 98,348 |
| 67350 | Rents & Leases Structure | - | - | - | - | - |
| 67400 | Household | 224 | 2,305 | 2,305 | 224 | 2,305 |
| 67450 | Professional & Special Services | 179,683 | 202,750 | 202,750 | 202,750 | 202,750 |
| 67460 | Temporary Agency Services | 2,585 | 5,000 | 10,000 | 10,000 | 5,000 |
| 67500 | Public Notice & Advertising | 7,987 | 26,500 | 19,500 | 19,240 | 26,500 |
| 67550 | Demurrage | - | - | - | - | - |
| 67600 | Maintenance of Equipment | 92,068 | 76,390 | 76,390 | 76,390 | 71,762 |
| 67650 | Building Maintenance | - | - | - | - | - |
| 67700 | Auto Mileage | 4,263 | 4,200 | 6,200 | 6,200 | 4,200 |
| 67750 | Auto Service | 294,314 | 311,047 | 311,047 | 294,314 | 311,047 |
| 67800 | Travel | 1,310 | 1,440 | 3,440 | 3,129 | 1,440 |
| 67850 | Utilities | - | - | - | - | - |
| 67900 | Communications | 3,518 | 20,900 | 20,900 | 11,770 | 20,900 |
| 67950 | Interest Expense | - | - | - | - | - |
| 68000 | Clothing | 8,748 | 8,180 | 8,180 | 6,903 | 8,180 |
| 68050 | Laboratory Supplies | - | - | - | - | - |
| 68060 | Postage | 5,059 | 11,469 | 11,469 | 2,335 | 11,469 |
| 68100 | Office Expense | 82,556 | 90,740 | 88,740 | 88,740 | 90,740 |
| 68200 | Office Furniture | 45,009 | 50,000 | 50,000 | 50,000 | 50,000 |
| 68250 | Subscriptions & Books | 811 | 1,920 | 1,920 | 1,558 | 1,920 |
| 68300 | Small Tools, Instruments, Equipment | 6,268 | 4,700 | 4,700 | 4,159 | 4,700 |
| 68350 | Film | - | - | - | - | - |
| 68400 | Gas and Oil | 286,385 | 372,000 | 372,000 | 316,676 | 372,000 |
| 69500 | Training/Conference/Tuition/ Board Exp. | 21,412 | 12,817 | 12,817 | 12,817 | 12,817 |
| 69550 | Memberships | 1,981 | 3,265 | 3,265 | 1,616 | 3,265 |
| 69600 | Taxes | - | - | - | - | - |
| 69650 | Awards | - | - | - | - | - |
| 69700 | Miscellaneous Expenses | 887 | 12,000 | 12,000 | 6,314 | 12,000 |
| 69750 | Prior Year Expense | (619) | - | - | - | - |
| 69800 | Uncollectable Accounts Receivable | - | - | - | - | - |
| 89100 | Principal Repayment | - | - | - | - | - |
| Sub-total Services & Supplies | | \$ 1,137,984 | \$ 1,309,223 | \$ 1,309,223 | \$ 1,206,736 | \$ 1,311,343 |
| 77000 | Capital Outlays | \$ - | \$ - | \$ - | \$ - | \$ - |
| 79050 | Building Remodeling | \$ - | \$ - | \$ - | \$ - | \$ - |
| Total Expenditures | | \$ 5,159,548 | \$ 5,209,753 | \$ 5,209,753 | \$ 5,188,639 | \$ 5,347,480 |

* Estimates based on July 2013 through March 2014 actual expenditures and budget amendments.



**SOUTH COAST
AIR QUALITY MANAGEMENT DISTRICT**

INFORMATION MANAGEMENT

CHRIS MARLIA
ASSISTANT DEPUTY EXECUTIVE OFFICER

DESCRIPTION OF MAJOR SERVICES:

The Information Management (IM) unit provides a wide range of information management systems and services in support of all SCAQMD operations. In addition to the unit's administration, which provides for overall planning, administration and coordination of the unit's activities, IM is comprised of two Information Technology (IT) sections, and a Special Projects unit. Due to the increasing convergence between hardware, software and digital technologies, the work performed by the two sections often overlaps and requires close coordination. The units are distinguished from each other in that one is primarily concerned with hardware and network issues (while acquiring and applying software to integrate systems and functions), whereas the other focuses on system development (while integrating communication functions and the latest computer technologies). Areas where the two sections overlap include workflow automation, imaging, and automatic system messaging (e.g., through email).

ACCOMPLISHMENTS:

RECENT:

- Oil and Gas Well Operation – Provided a fully functional web-based application to implement reporting requirements of recently adopted Rule 1148.2 – Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers. The application includes a public portal for viewing non-confidential reported information.
- Operational Support – Provided rule-mandated enhancements to the web-based application for the Rule 1113 Architectural Coatings, offering external reporting, internal data management and access to the central information repository for all users requiring the information.
- Annual Emission Reporting – Provided a fully functional web-based application system including external reporting, internal data management, and access to the central information repository for all users requesting information.
- Network Operations/Telecommunications – Supported over 7,000 pieces of computer hardware for the SCAQMD; maintained and supported approximately 100 Windows/NT servers; handled approximately 8,300 support line calls for the SCAQMD; accessed and supported approximately 750 SCAQMD remotes lines; installed and upgraded approximately 700 requests for VPN remote access, DMV, EBAM (Cellular Modems), Faxes, AMS (Air Monitoring Stations) telemetry lines; installed and upgraded software in response to approximately 1,800 requests; provided 80 videoconferences for Board

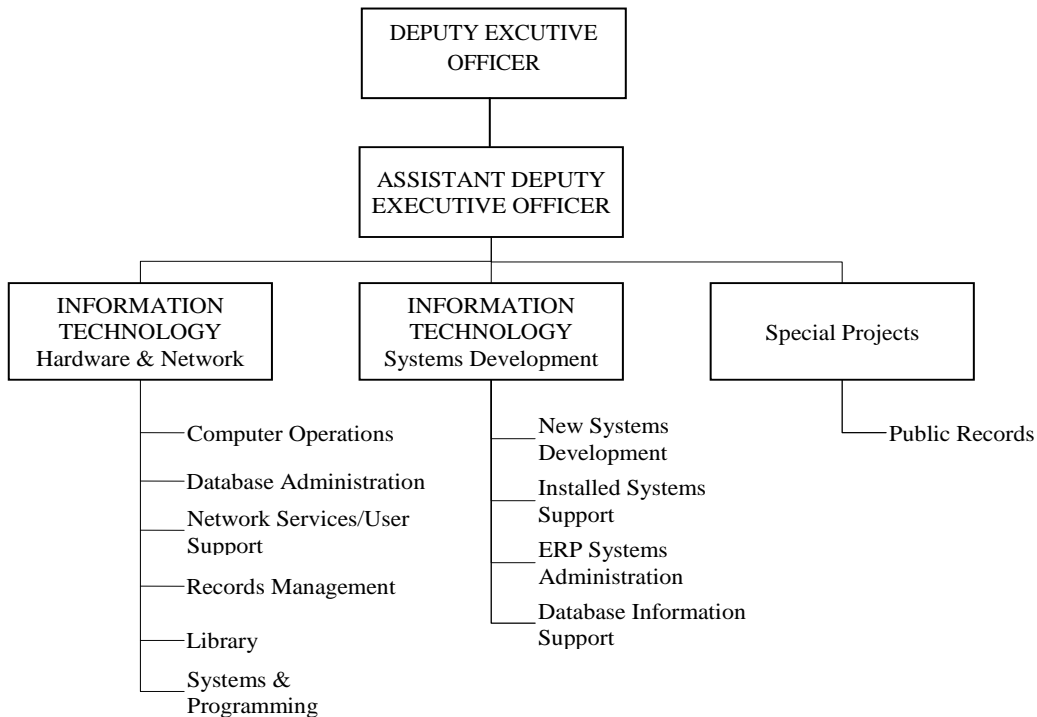
Members, Assistants and the Executive Office; provided approximately 950 internet/intranet access requests for SCAQMD staff.

- Public Records Act – Provided troubleshooting for accuracy for all Public Information Requests that were entered (almost 4,000); provided information for over 3,000 requests for public information and ensured they were provided; provided assistance for over 2,000 records retrieved by Public Records Unit staff and reviewed for confidentiality.
- Web Tasks – Maintained over 10,000 Web pages/support files on SCAQMD’s public website; maintained over 1,000 Web pages/support files on AIRNet (SCAQMD’s internal website); processed approximately 300 Web requests a month; provided over 12 Board and special meeting agenda packages translated for the web; provided Web training as needed; updated procedural and guidance documents as needed.

PROJECTS IN PROCESS:

- Develop online filing infrastructure
- Implement videoconferencing bridge
- Implement replacement DPO/Enforcement tracking system
- Implement eGovernment infrastructure
- Upgrade all desktops computer operating systems and Office Suite

ORGANIZATIONAL CHART:



POSITION SUMMARY: 49 FTEs

| Unit | Current (FY 2013-14) | Changes | Proposed (FY 2014-15) |
|-----------------------|-------------------------|---------|--------------------------|
| Office Administration | 3 | - | 3 |
| Hardware & Network | 27 | - | 27 |
| Systems Development | 14 | - | 14 |
| Special Projects | 2 | - | 2 |
| Public Records | 3 | - | 3 |
| Total | 49 | - | 49 |

STAFFING DETAIL:

2014-15 Requested Staffing

| <u>Position</u> | <u>Title</u> |
|-----------------|---|
| 1 | Assistant Database Administrator |
| 1 | Assistant Deputy Executive Officer/Information Management |
| 1 | Audio Visual Specialist |
| 1 | Computer Operations Supervisor |
| 4 | Computer Operator |
| 1 | Database Administrator |
| 1 | Deputy Executive Officer/Information Management |
| 4 | Office Assistant |
| 1 | Principal Office Assistant |
| 1 | Public Affairs Specialist |
| 2 | Secretary |
| 2 | Senior Administrative Secretary |
| 3 | Senior Office Assistant |
| 9 | Systems Analyst |
| 8 | Systems and Programming Supervisor |
| 2 | Technology Implementation Manager |
| 2 | Telecommunications Supervisor |
| <u>5</u> | Telecommunications Technician II |
| 49 | Total Requested Positions |

**Information Management
Work Program by Office**

| # | Program Code | Program Category | Goal | Program | Activities | FTEs | | Revenue Categories |
|----|--------------|------------------|--|--------------------------------|---------------------------------|------------|------|--------------------|
| | | | | | | FY 2013-14 | +/- | |
| 1 | 27 | 038 | Operational Support | Admin/Office Management | Overall Direction/Coord of IM | 3.00 | 3.00 | 1b |
| 2 | 27 | 071 | Operational Support | Arch Ctgs - Admin | Database Dev/Maintenance | 0.25 | 0.25 | XVIII |
| 3 | 27 | 160 | Operational Support | Computer Operations | Oper/Manage Host Computer Sys | 5.25 | 5.25 | 1a |
| 4 | 27 | 184 | Operational Support | Database Information Support | Ad Hoc Reports/Bulk Data Update | 1.00 | 1.00 | 1a |
| 5 | 27 | 185 | Operational Support | Database Management | Dev/Maintain Central Database | 2.25 | 2.25 | 1a |
| 6 | 27 | 215 | Operational Support | Annual Emission Reporting | System Enhancements for GHG | 0.50 | 0.50 | II,XVII |
| 7 | 27 | 370 | Operational Support | Information Technology Svcs | Enhance Oper Effic/Productivity | 2.75 | 2.75 | 1a |
| 8 | 27 | 420 | Operational Support | Library | General Library Svcs/Archives | 0.25 | 0.25 | 1a |
| 9 | 27 | 470 | Operational Support | Network Operations/Telecomm | Operate/Maintain/Implem SCAQMD | 9.25 | 9.25 | 1a |
| 10 | 27 | 480 | Operational Support | New System Development | Dev sys for special oper needs | 3.00 | 3.00 | II,IV |
| 11 | 27 | 481 | Customer Service and Business Assistance | New System Development | Dev sys in supp of Dist-wide | 1.75 | 1.75 | 1a,III |
| 12 | 27 | 523 | Timely Review of Permits | Permit Streamlining | Permit Streamlining | 0.25 | 0.25 | III |
| 13 | 27 | 565 | Customer Service and Business Assistance | Public Records Act | Comply w/ Public Req for Info | 3.75 | 3.75 | 1a |
| 14 | 27 | 615 | Operational Support | Records Information Mgmt Plan | Plan/impl/Dir/Records Mgmt plan | 1.25 | 1.25 | 1a |
| 15 | 27 | 616 | Operational Support | Records Services | Records/Documents processing | 3.75 | 3.75 | 1a,III,IV |
| 16 | 27 | 735 | Operational Support | Systems Maintenance | Maintain Existing Software Prog | 4.50 | 4.50 | II,III,IV |
| 17 | 27 | 736 | Operational Support | Systems Implementation/PeopleS | Fin/HR PeopleSoft Systems Impl | 1.50 | 1.50 | 1a |
| 18 | 27 | 770 | Timely Review of Permits | Title V | Dev/Maintain Title V Program | 1.00 | 1.00 | III |
| 19 | 27 | 791 | Ensure Compliance | Toxics/AB2588 | AB2588 Database Software Supp | 0.50 | 0.50 | X |
| 20 | 27 | 855 | Operational Support | Web Tasks | Create/edit/review web content | 3.25 | 3.25 | 1a |

| | | | |
|--------------|-------|------|-------|
| Total | 49.00 | 0.00 | 49.00 |
|--------------|-------|------|-------|

| Information Management Line Item Expenditure | | | | | | |
|--|---|-----------------------|---------------------------------|---------------------------------|--------------------------|------------------------|
| Major Object / Account # / Account Description | | FY 2012-13 Actuals | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2013-14 Estimate * | FY 2014-15 Proposed |
| Salary & Employee Benefits | | | | | | |
| 51000-52000 | Salaries | \$ 4,714,743 | \$ 4,512,618 | \$ 4,512,618 | \$ 4,671,752 | \$ 4,542,714 |
| 53000-55000 | Employee Benefits | 2,475,499 | 2,409,857 | 2,409,858 | 2,616,837 | 2,625,156 |
| Sub-total Salary & Employee Benefits | | \$ 7,190,242 | \$ 6,922,476 | \$ 6,922,476 | \$ 7,288,589 | \$ 7,167,870 |
| Services & Supplies | | | | | | |
| 67250 | Insurance | \$ - | \$ - | \$ - | \$ - | \$ - |
| 67300 | Rents & Leases Equipment | - | 1,880 | 1,880 | - | 1,880 |
| 67350 | Rents & Leases Structure | - | - | - | - | - |
| 67400 | Household | - | 1,250 | 1,250 | - | 1,250 |
| 67450 | Professional & Special Services | 1,007,940 | 983,921 | 1,182,091 | 1,088,721 | 982,521 |
| 67460 | Temporary Agency Services | 106,854 | 500,320 | 179,320 | 222,896 | 500,320 |
| 67500 | Public Notice & Advertising | - | - | - | - | - |
| 67550 | Demurrage | - | 650 | 650 | - | 650 |
| 67600 | Maintenance of Equipment | 53,122 | 82,000 | 94,630 | 65,015 | 82,000 |
| 67650 | Building Maintenance | - | - | - | - | - |
| 67700 | Auto Mileage | 2,102 | 1,250 | 3,250 | 3,250 | 1,250 |
| 67750 | Auto Service | - | - | - | - | - |
| 67800 | Travel | 6,502 | 2,160 | 5,560 | 4,266 | 2,160 |
| 67850 | Utilities | - | - | - | - | - |
| 67900 | Communications | 19,517 | 36,900 | 36,900 | 21,465 | 36,900 |
| 67950 | Interest Expense | - | - | - | - | - |
| 68000 | Clothing | - | - | - | - | - |
| 68050 | Laboratory Supplies | - | - | - | - | - |
| 68060 | Postage | 777 | 5,500 | 5,500 | 1,094 | 5,500 |
| 68100 | Office Expense | 367,769 | 323,912 | 317,412 | 317,412 | 323,912 |
| 68200 | Office Furniture | 6,862 | - | - | - | - |
| 68250 | Subscriptions & Books | 9,026 | 30,000 | 30,000 | 16,606 | 30,000 |
| 68300 | Small Tools, Instruments, Equipment | - | 2,000 | - | - | 2,000 |
| 68350 | Film | - | - | - | - | - |
| 68400 | Gas and Oil | - | - | - | - | - |
| 69500 | Training/Conference/Tuition/ Board Exp. | 80,764 | 46,575 | 49,875 | 49,875 | 46,575 |
| 69550 | Memberships | 300 | 1,770 | 1,770 | 400 | 1,570 |
| 69600 | Taxes | - | 1,000 | 1,000 | - | 1,000 |
| 69650 | Awards | - | - | - | - | - |
| 69700 | Miscellaneous Expenses | - | - | - | - | - |
| 69750 | Prior Year Expense | - | - | - | - | - |
| 69800 | Uncollectable Accounts Receivable | - | - | - | - | - |
| 89100 | Principal Repayment | - | - | - | - | - |
| Sub-total Services & Supplies | | \$ 1,661,533 | \$ 2,021,088 | \$ 1,911,088 | \$ 1,791,000 | \$ 2,019,488 |
| 77000 | Capital Outlays | \$ 721,929 | \$ 387,500 | \$ 706,260 | \$ 614,500 | \$ 712,500 |
| 79050 | Building Remodeling | \$ - | \$ - | \$ - | \$ - | \$ - |
| Total Expenditures | | \$ 9,573,705 | \$ 9,331,064 | \$ 9,539,824 | \$ 9,694,088 | \$ 9,899,858 |
| * Estimates based on July 2013 through March 2014 actual expenditures and budget amendments. | | | | | | |



**SOUTH COAST
AIR QUALITY MANAGEMENT DISTRICT**

PLANNING, RULE DEVELOPMENT & AREA SOURCES

**ELAINE CHANG
DEPUTY EXECUTIVE OFFICER**

DESCRIPTION OF MAJOR SERVICES:

The Office of Planning, Rule Development and Area Sources (PRDAS) is responsible for the majority of SCAQMD's air quality planning functions, including State Implementation Plan (SIP) related activities, maintenance plans, reporting requirements and other federal Clean Air Act requirements. PRDAS is also responsible for developing proposals for new rules and amendments to existing rules to implement the SIP obligations and to reduce air toxic emissions/exposures, and for conducting socioeconomic assessments of AQMPs and rulemaking actions. All CEQA functions are part of this office including lead agency, responsible agency, and commenting agency under CEQA. In addition, this office is responsible for developing and implementing the SCAQMD's Clean Communities Plan which is an overall plan for air toxics and includes communities that support the agency's overall goals for environmental justice. The office also conducts air quality evaluations and forecasting, inventories of area sources, and permitting and compliance activities related to area sources. The Transportation Program provides Rule 2202 and AB2766 Subvention fund program assistance and training to the regulated community and local governments.

ACCOMPLISHMENTS:

RECENT:

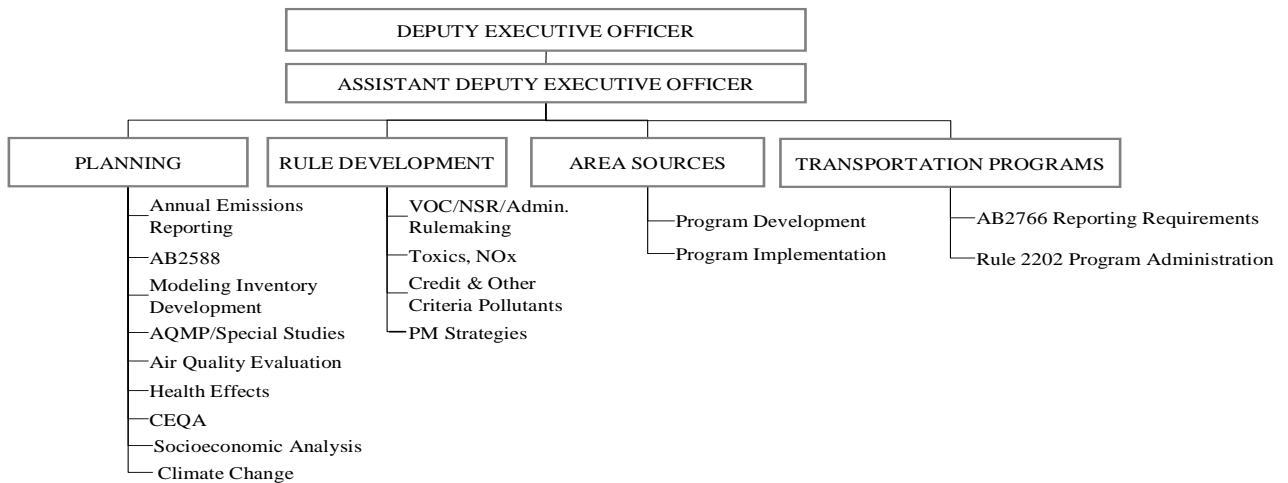
- Completed the 2012 AQMP.
- Adopted/amended 3 rules for SIP implementation which resulted in achieving the following emission reductions: 0.4 tons/day VOC, and 11.4 tons/day PM2.5.
- Adopted/amended notification and reporting rule for oil and gas wells and established additional air toxic standards for large lead-acid battery recycling facilities (non-SIP measures).
- Reviewed and commented on approximately 700 CEQA documents prepared by other lead agencies, including Southern California International Gateway (SCIG) rail yard, warehouse and distribution centers, and the I-710 project.
- Continued ongoing implementation of the Clean Communities Plan, including administering programs funded by EPA's Targeted Air Shed Grant.
- Upgraded the objective air quality forecasting program to address the residential burn rule implementation.

ANTICIPATED:

- Continue implementation of 2012 AQMP SIP obligations through development of new and amended VOC, NOx, and PM2.5 rules.
- Initiate development of 2016 AQMP and prepare RACT analysis by July 2014 for submittal to U.S. EPA.

- Develop toxic rule for metal forging operations, strengthen emission standards for large lead-acid battery recycling facilities, develop additional requirements for other lead sources, revise toxic requirements for existing sources (AB2588), and develop new requirements to control odors from rendering facilities.
- Analyze and implement OEHHA’s revised risk reduction guidelines, pending OEHHA approval.
- Complete warehouse/distribution center truck trip rate study.
- Complete pilot studies for Clean Communities Plan.
- Support development of backstop regulations to limit emissions from port facilities.
- Complete development and begin implementation of a new web-based Annual Emission Reporting system.
- Complete the MATES IV monitoring and modeling air toxic exposure and risk analysis.
- Complete the Socioeconomic Analysis review and implementation.
- Complete the NOx RECLAIM rule amendment and implement the corresponding shave.

ORGANIZATIONAL CHART:



POSITION SUMMARY: 111 FTEs

| Unit | Current (FY 2013-14) | Changes | Proposed (FY 2014-15) |
|-------------------------|-------------------------|----------|--------------------------|
| Office Administration | 6 | - | 6 |
| Planning | 66 | - | 66 |
| Rule Development | 12 | - | 12 |
| Area Sources | 12 | - | 12 |
| Transportation Programs | 13 | - | 13 |
| Health Effects | 2 | - | 2 |
| Total | 111 | - | 111 |

STAFFING DETAIL:

2014-15 Requested Staffing

| <u>Position</u> | <u>Title</u> |
|-----------------|--|
| 2 | Administrative Secretary |
| 9 | Air Quality Engineer II |
| 4 | Air Quality Inspector II |
| 1 | Air Quality Inspector III |
| 41 | Air Quality Specialist |
| 1 | Assistant Deputy Executive Officer |
| 1 | Deputy Executive Officer - Planning, Rule Development & Area Sources |
| 1 | Director of Strategic Initiatives |
| 1 | Health Effects Officer |
| 6 | Office Assistant |
| 5 | Planning and Rules Manager |
| 18 | Program Supervisor |
| 7 | Secretary |
| 2 | Senior Administrative Secretary |
| 4 | Senior Air Quality Engineer |
| 1 | Senior Meteorologist |
| 3 | Senior Office Assistant |
| 1 | Senior Staff Specialist |
| 1 | Senior Transportation Specialist |
| <u>2</u> | Transportation Plan Reviewer |
| 111 | Total Requested Positions |

**Planning, Rule Development, and Area Sources
Work Program by Office**

| # | Program Code | Program Category | Goal | Program | Activities | FTEs | | Revenue Categories |
|----|--------------|--|------|---------------------------------|---|------------|----------------|--------------------|
| | | | | | | FY 2013-14 | +/- FY 2014-15 | |
| 1 | 26 002 | Develop Programs | I | AB2766/Mobile Source | AB2766 Mobile Source Outreach | 0.89 | 0.89 | IX |
| 2 | 26 007 | Customer Service and Business Assistance | I | AB2766/MSRC | AB2766 Prov Tech Asst to Cities | 1.10 | 1.10 | IX |
| 3 | 26 009 | Develop Programs | I | AB 1318 Mitigation | AB 1318 Projects Admn/Impl | 0.50 | (0.50) | XVII |
| 4 | 26 010 | Develop Programs | I | AQMP | AQMP Special Studies | 2.00 | 2.00 | IV,IX,XV |
| 5 | 26 038 | Develop Programs | I | Admin/Office Management | Coordinate Off/Admin Activities | 0.50 | 0.50 | 1b |
| 6 | 26 040 | Timely Review of Permits | I | Admin/Office Mgmt/AQ Impl | Admin/Modeling/New Legi/Sm Sr | 0.42 | 0.42 | 1b |
| 7 | 26 042 | Ensure Compliance | I | Admin/Office Mgmt/Compliance | Admin: Compl w SCAQMD Rules | 0.25 | 0.25 | 1b |
| 8 | 26 044 | Timely Review of Permits | I | Admin/Office Mgmt/Permit & Fee | Admin: Resolve Perm/Fee Issues | 0.10 | 0.10 | 1b |
| 9 | 26 046 | Ensure Compliance | I | Admin/Office Mgmt/Compliance | Admin: Compl of Existing Source | 0.00 | 0.52 | 1b |
| 10 | 26 048 | Policy Support | I | Admin/Prog Mgmt/Policy | Admin: GB/Committee Support | 1.00 | 1.00 | 1b, |
| 11 | 26 049 | Develop Programs | I | Admin/Prog Mgmt/AQMP | Admin: AQMP Development | 0.75 | 0.75 | 1b |
| 12 | 26 050 | Develop Rules | I | Admin/Rule Dev/PRA | Admin: Rule Development | 1.00 | 1.00 | 1b |
| 13 | 26 057 | Develop Programs | I | Admin/Transportation Prog Mgmt | Admin: Transportation Programs | 0.86 | 0.86 | 1b |
| 14 | 26 061 | Monitoring Air Quality | I | Air Quality Evaluation | Air Quality Evaluation | 1.00 | 1.00 | IX |
| 15 | 26 068 | Develop Programs | II | SCAQMD Projects | Prepare Environmental Assessments | 5.10 | (0.40) | II,IV,IX |
| 16 | 26 071 | Develop Rules | I | Arch Ctgs - Admin | Rdev/Aud/DB/TA/SCAQMD/Rpts/AER | 1.00 | (0.25) | XVIII |
| 17 | 26 072 | Ensure Compliance | I | Arch Ctgs - End User | Compliance/Rpts/Rule Implementation | 1.00 | 1.00 | XVIII |
| 18 | 26 073 | Ensure Compliance | I | Arch Ctgs - Other | Compliance/Rpts/Rule Implementation | 1.00 | 1.00 | XVIII |
| 19 | 26 076 | Ensure Compliance | I | Area Sources/Compliance | Area Source Compliance | 3.50 | (0.50) | IV,IX,XV |
| 20 | 26 077 | Develop Rules | I | Area Sources/Rulemaking | Dev/Eval/Impl Area Source Prog | 4.00 | 4.00 | II,IX |
| 21 | 26 083 | Policy Support | II | Brain Tumor & Air Poll Fdn | Brain Tumor & Air Poll Foundation Support | 0.10 | 0.10 | 1a |
| 22 | 26 084 | Develop Rules | I | Blk Carbon Study EPA | EPA Blck Carbon Climate Study | 0.00 | 0.20 | V,XVII |
| 23 | 26 102 | Develop Programs | II | CEQA Document Projects | Review/Prepare CEQA Comments | 3.40 | 3.75 | II,IX |
| 24 | 26 103 | Develop Programs | II | CEQA Special Projects | Contracted by Lead Agency | 0.40 | (0.40) | XVII |
| 25 | 26 104 | Develop Programs | I | CEQA Policy Development | ID/Develop/Impl CEQA Policy | 1.10 | (0.60) | IV,IX |
| 26 | 26 120 | Timely Review of Permits | I | Certification/Registration Pro | Certification/Registration Prog | 1.80 | 1.80 | III |
| 27 | 26 128 | Develop Programs | I | Cln Communities Pln | Cln Communities Plan Admn/Impl | 1.50 | (1.00) | II,IX |
| 28 | 26 148 | Policy Support | I | Climate Change | GHG/Climate Change Policy Development | 2.00 | (0.90) | IV |
| 29 | 26 151 | Monitoring Air Quality | II | Community Scale AirToxics Study | EPA-funded airports air monit | 0.50 | (0.50) | XVII |
| 30 | 26 165 | Develop Rules | I | Conformity | Monitor Transp. Conformity | 0.50 | 0.50 | V,IX |
| 31 | 26 215 | Ensure Compliance | I | Annual Emission Reporting | Annl Des/Impl/Emiss Monitor Sys | 4.00 | 3.50 | II,V |
| 32 | 26 216 | Customer Service and Business Assistance | I | AER Public Assistance | AER Design/Impl/Monitor Emiss | 0.15 | 1.85 | II |
| 33 | 26 217 | Develop Programs | I | Emissions Inventory Studies | Dev Emiss DB/Dev/Update Emiss | 4.00 | (2.00) | II,IV,IX,XV |
| 34 | 26 218 | Develop Programs | I | AQMP/Emissions Inventory | Dev Emiss Inv: Forecasts/RFPs | 2.25 | 0.20 | II,IX |
| 35 | 26 219 | Develop Programs | I | Emissions Field Audit | Emissions Field Audit | 2.00 | (1.50) | II |
| 36 | 26 221 | Develop Programs | I | PR2301 ISR Rule Implementation | Mitigate dev growth | 1.02 | 0.48 | II,IX |
| 37 | 26 240 | Policy Support | I | El-AQ Guidance Document | AQ Guidance Document | 0.28 | (0.05) | II,IX |
| 38 | 26 276 | Policy Support | I | Advisory Group/Home Rule | Governing Board Advisory Group | 0.30 | 0.30 | 1a |
| 39 | 26 277 | Policy Support | I | Advisory Group/AQMP | Governing Board AQMP Advisory Group | 0.05 | 0.05 | II,IX |
| 40 | 26 278 | Policy Support | I | Advisory Group/Sci,Tech,Model | Scientific/Tech/Model Peer Rev | 0.05 | 0.05 | II,IX |
| 41 | 26 357 | Ensure Compliance | I | GHG Reptg Sys EPA | GHG Reptg Sys EPA Admn/Impl | 0.10 | (0.10) | V |
| 42 | 26 362 | Develop Rules | II | Health Effects | Study Health Effect/Toxicology | 1.80 | 1.80 | II,III,IX |
| 43 | 26 385 | Develop Rules | I | Criteria Pollutants/Mob Srcs | Dev/Impl Intercredit Trading | 1.00 | (0.25) | IV,IX |

**Planning, Rule Development, and Area Sources
Work Program by Office**

| # | Program Code | Program Category | Goal | Program | Activities | FTEs | | Revenue Categories | |
|--------------|--------------|------------------|--|---------|-------------------------------|------------|----------------|--------------------|----------|
| | | | | | | FY 2013-14 | +/- FY 2014-15 | | |
| 44 | 26 | 397 | Develop Programs | II | Lead Agency Projects | 1.30 | (0.55) | 0.75 | III |
| 45 | 26 | 416 | Policy Support | I | Legislative Activities | 0.10 | | 0.10 | 1a |
| 46 | 26 | 439 | Monitoring Air Quality | I | MATES IV | 0.10 | | 0.10 | II,IX |
| 47 | 26 | 445 | Monitoring Air Quality | I | Meteorology | 2.00 | 0.20 | 2.20 | II,V,IX |
| 48 | 26 | 460 | Develop Rules | I | Regional Modeling | 5.25 | 0.20 | 5.45 | II,V,IX |
| 49 | 26 | 461 | Timely Review of Permits | I | Permit & CEQA Modeling Review | 1.50 | | 1.50 | III |
| 50 | 26 | 463 | Develop Programs | I | Mold Project EPA | 0.10 | (0.10) | 0.00 | V |
| 51 | 26 | 503 | Develop Programs | I | PM Strategies | 4.00 | | 4.00 | II,V,XV |
| 52 | 26 | 530 | Monitoring Air Quality | I | Photochemical I Assessment | 0.25 | | 0.25 | II,V |
| 53 | 26 | 565 | Customer Service and Business Assistance | III | Public Records Act | 0.05 | 0.48 | 0.53 | 1a |
| 54 | 26 | 600 | Develop Programs | I | Credit Generation Programs | 1.25 | | 1.25 | II,IX |
| 55 | 26 | 620 | Ensure Compliance | I | Refinery Pilot Project | 0.25 | | 0.25 | II |
| 56 | 26 | 643 | Timely Review of Permits | I | Rule 222 Filing Program | 0.20 | | 0.20 | IV |
| 57 | 26 | 645 | Ensure Compliance | I | Rule 1610 Plan Verification | 0.50 | | 0.50 | V,IX |
| 58 | 26 | 654 | Develop Rules | I | Rulemaking/NOX | 1.00 | 1.00 | 2.00 | II,IV |
| 59 | 26 | 655 | Develop Rules | I | NSR/Adm Rulemaking | 5.00 | (2.00) | 3.00 | II,IV |
| 60 | 26 | 656 | Develop Rules | I | Rulemaking/VOC | 6.90 | 0.60 | 7.50 | II,IV,XV |
| 61 | 26 | 659 | Develop Rules | I | Rulemaking/Toxics | 3.20 | 1.80 | 5.00 | II |
| 62 | 26 | 661 | Develop Rules | I | Rulemaking/RECLAIM | 2.00 | 0.20 | 2.20 | II |
| 63 | 26 | 685 | Develop Programs | I | Socio-Economic | 3.25 | 0.20 | 3.45 | II,IV |
| 64 | 26 | 716 | Ensure Compliance | I | Spec Monitoring/R403 | 0.75 | 0.25 | 1.00 | IV,IX,XV |
| 65 | 26 | 717 | Policy Support | II | Student Interns | 0.01 | | 0.01 | 1a |
| 66 | 26 | 738 | Advance Clean Air Technology | I | Target Air Shed EPA | 0.50 | (0.25) | 0.25 | XVII |
| 67 | 26 | 745 | Develop Programs | I | Rideshare | 0.65 | | 0.65 | IX |
| 68 | 26 | 789 | Monitoring Air Quality | I | Toxic Inventory Development | 1.00 | (1.00) | 0.00 | X |
| 69 | 26 | 790 | Ensure Compliance | I | Toxics/AB2588 Plans/Reports | 0.50 | (0.50) | 0.00 | X |
| 70 | 26 | 794 | Ensure Compliance | I | Toxics/AB2588 | 7.00 | 1.50 | 8.50 | X |
| 71 | 26 | 805 | Operational Support | III | Training | 0.05 | | 0.05 | 1b |
| 72 | 26 | 816 | Develop Programs | I | Transportation Regional Progs | 0.60 | | 0.60 | IX |
| 73 | 26 | 821 | Monitoring Air Quality | II | TraPac Air Filt Prg | 0.25 | (0.25) | 0.00 | XVII |
| 74 | 26 | 826 | Operational Support | III | Union Negotiations | 0.01 | | 0.01 | 1a |
| 75 | 26 | 826 | Operational Support | III | Lead Agency Projects | 0.01 | | 0.01 | 1a |
| 76 | 26 | 833 | Customer Service and Business Assistance | II | Rule 2202 ETC Training | 1.30 | | 1.30 | XI |
| 77 | 26 | 834 | Develop Programs | I | Rule 2202 Implement | 3.07 | | 3.07 | XI |
| 78 | 26 | 836 | Develop Programs | I | Rule 2202 Support | 2.73 | 0.07 | 2.80 | V,XI |
| 79 | 26 | 855 | Operational Support | II | Web Tasks | 0.10 | | 0.10 | 1a |
| Total | | | | | | 111.00 | (0.00) | 111.00 | |

| Planning, Rule Development & Area Sources | | | | | | |
|--|---|---------------------------------|---------------------------------|--------------------------|------------------------|---------------|
| Line Item Expenditure | | | | | | |
| Major Object / Account # / Account Description | FY 2012-13 Actuals | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2013-14 Estimate * | FY 2014-15 Proposed | |
| Salary & Employee Benefits | | | | | | |
| 51000-52000 | Salaries | \$ 9,853,905 | \$ 9,994,864 | \$ 9,994,864 | \$ 8,947,655 | \$ 10,187,633 |
| 53000-55000 | Employee Benefits | 4,426,191 | 4,902,666 | 4,902,667 | 4,265,837 | 5,136,667 |
| Sub-total Salary & Employee Benefits | | \$ 14,280,096 | \$ 14,897,530 | \$ 14,897,531 | \$ 13,213,492 | \$ 15,324,301 |
| Services & Supplies | | | | | | |
| 67250 | Insurance | \$ - | \$ - | \$ - | \$ - | \$ - |
| 67300 | Rents & Leases Equipment | - | 1,000 | 1,200 | 92 | 1,000 |
| 67350 | Rents & Leases Structure | 25,759 | 5,000 | 25,000 | 18,775 | 5,000 |
| 67400 | Household | - | - | - | - | - |
| 67450 | Professional & Special Services | 532,678 | 536,500 | 814,200 | 477,579 | 519,000 |
| 67460 | Temporary Agency Services | 36,022 | 72,000 | 112,000 | 87,706 | 50,000 |
| 67500 | Public Notice & Advertising | 59,776 | 127,000 | 102,000 | 90,472 | 100,000 |
| 67550 | Demurrage | 240 | 500 | 1,000 | 1,000 | 500 |
| 67600 | Maintenance of Equipment | 42,763 | 12,000 | 79,500 | 53,962 | 12,000 |
| 67650 | Building Maintenance | 3,697 | 1,000 | 14,000 | 13,569 | 1,000 |
| 67700 | Auto Mileage | 3,098 | 5,000 | 5,000 | 2,455 | 4,000 |
| 67750 | Auto Service | - | - | - | - | - |
| 67800 | Travel | 29,957 | 45,000 | 48,000 | 29,957 | 45,000 |
| 67850 | Utilities | - | - | - | - | - |
| 67900 | Communications | 30,664 | 30,000 | 53,000 | 40,026 | 30,000 |
| 67950 | Interest Expense | - | - | - | - | - |
| 68000 | Clothing | 285 | 600 | 600 | 285 | 600 |
| 68050 | Laboratory Supplies | - | - | - | - | - |
| 68060 | Postage | 11,961 | 17,000 | 35,150 | 24,586 | 20,000 |
| 68100 | Office Expense | 86,444 | 139,061 | 150,061 | 83,861 | 150,000 |
| 68200 | Office Furniture | - | - | - | - | - |
| 68250 | Subscriptions & Books | 1,688 | 7,650 | 7,650 | 6,941 | 5,000 |
| 68300 | Small Tools, Instruments, Equipment | 132 | - | 600 | 79 | - |
| 68350 | Film | - | - | - | - | - |
| 68400 | Gas and Oil | - | - | - | - | - |
| 69500 | Training/Conference/Tuition/ Board Exp. | 10,975 | 21,500 | 24,500 | 13,260 | 21,500 |
| 69550 | Memberships | 1,689 | 4,000 | 4,000 | 1,689 | 2,000 |
| 69600 | Taxes | - | - | - | - | - |
| 69650 | Awards | - | - | - | - | - |
| 69700 | Miscellaneous Expenses | 30,013 | 25,500 | 25,500 | 25,500 | 28,000 |
| 69750 | Prior Year Expense | (29) | - | - | - | - |
| 69800 | Uncollectable Accounts Receivable | - | - | - | - | - |
| 89100 | Principal Repayment | - | - | - | - | - |
| Sub-total Services & Supplies | | \$ 907,810 | \$ 1,050,311 | \$ 1,502,961 | \$ 971,794 | \$ 994,600 |
| 77000 | Capital Outlays | \$ 177,117 | \$ 200,000 | \$ 226,000 | \$ 159,426 | \$ 150,000 |
| 79050 | Building Remodeling | \$ - | \$ - | \$ - | \$ - | \$ - |
| Total Expenditures | | \$ 15,365,023 | \$ 16,147,841 | \$ 16,626,492 | \$ 14,344,712 | \$ 16,468,901 |

* Estimates based on July 2013 through March 2014 actual expenditures and budget amendments.

LEGISLATIVE & PUBLIC AFFAIRS

**LISHA B. SMITH
DEPUTY EXECUTIVE OFFICER**

DESCRIPTION OF MAJOR SERVICES:

Legislative and Public Affairs' (LPA) primary responsibilities include all legislative matters at the federal and state levels, community and local government relations, creation and production of collateral materials to support all District departments and programs, and staffing the 1-800-CUT-SMOG phone line. The Public Advisor, also within the LPA office, is responsible for keeping open lines of communication and coordination with the public, elected officials at all levels, the business community, as well as local residents. LPA is also the primary point of contact for the SCAQMD's Speakers Bureau and Visiting Dignitary program, oversees the Air Quality Institute, and provides assistance to small businesses within SCAQMD jurisdiction.

ACCOMPLISHMENTS:

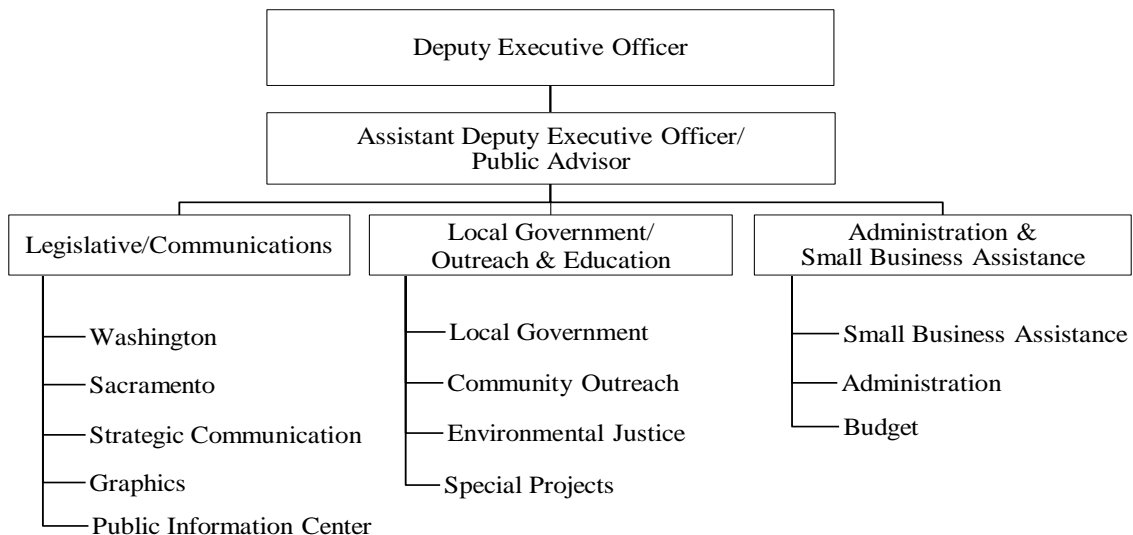
RECENT:

- During the last legislative session, the District's legislative team did an effective job advocating the District legislative goals.
 - o At the state level, the Governor signed eight of nine bills that the District supported and actively worked to secure their passage through the Legislature. The District defeated legislation that sought to undermine SCAQMD regulatory authority or to be detrimental to clean air. All eight bills that the District opposed were defeated during the legislative process.
 - o At the federal level, LPA continued to advance the agency's legislative agenda and made significant inroads with the U.S. Department of Energy, positioning the SCAQMD in a more favorable position for technology partnerships. Staff effectively initiated relationships with federal offices outside of our jurisdictional delegation (Chicago, IL, Santa Barbara, CA) to create regional and national alliance/partnerships promoting clean technologies and clean air goals.
- Staff coordinated 18 workshops and town hall meetings to address air quality concern in several communities in our jurisdiction.
- The Small Business Assistance Team responded to 2,046 requests for Permit Application Assistance, conducted 17 on-site consultations, processed 102 Fee Review Requests and issued 237 Clearance Letters.
- Staff improved the District's educational outreach through the design and production of collateral materials, including brochures, flyers, web pages, PowerPoint presentations, videos, and signage, for meetings, conferences and the annual Clean Air Awards program.

ANTICIPATED:

- Develop and implement a Crisis Communication Plan to improve the agency’s interaction with the public during incidents that generate high volume calls to the 1-800-CUT-SMOG line. The plan will implement protocols to provide callers with timely information through our radio telephone operators, recorded messages, and social media.
- Launch a comprehensive school education and outreach effort that includes a sports campaign component to increase public awareness of the SCAQMD and efforts to protect public health.
- Provide a quarterly legislative update to elected officials by generating an electronic publication highlighting the most current information pertaining to SCAQMD activities for distribution to local, state, and federal elected officials and their staff.
- Improve communication with the Business Community in the area of small business outreach to increase awareness of available programs and services, and provide information that enables business owners and operators to understand and comply with SCAQMD’s rules and regulations.
- Continue to move the SCAQMD’s legislative agenda at the state and federal levels.

ORGANIZATIONAL CHART:



POSITION SUMMARY: 41 FTEs

| Unit | Current (FY 2013-14) | Changes | Proposed (FY 2014-15) |
|--|-------------------------|---------|--------------------------|
| Office Administration | 5 | - | 5 |
| Legislative/Communications | 20 | - | 20 |
| Local Government/Outreach & Education | 7 | - | 7 |
| Administration & Small Business Assistance | 9 | - | 9 |
| Total | 41 | - | 41 |

STAFFING DETAIL:

2013-14 Requested Staffing

| <u>Position</u> | <u>Title</u> |
|-----------------|---|
| 2 | Air Quality Engineer II |
| 2 | Air Quality Inspector II |
| 1 | Assistant Deputy Executive Officer/Public Affairs |
| 2 | Community Relations Manager |
| 1 | Deputy Executive Officer/Public Affairs |
| 4 | Graphic Arts Illustrator II |
| 1 | Office Assistant |
| 1 | Program Supervisor |
| 1 | Public Affairs Specialist |
| 7 | Radio/Telephone Operator |
| 2 | Secretary |
| 2 | Senior Administrative Secretary |
| 1 | Senior Office Assistant |
| 1 | Senior Public Affairs Manager |
| 10 | Senior Public Information Specialist |
| 1 | Senior Staff Specialist |
| 1 | Staff Assistant |
| <u>1</u> | Supervising Radio/Telephone Operator |
| 41 | Total Requested Positions |

**Legislative & Public Affairs
Work Program by Office**

| # | Program Code | Program Category | Goal | Program | Activities | FTEs +/- | | Revenue Categories |
|----|--------------|------------------|--|---------------------------------|---|------------|------------|--------------------|
| | | | | | | FY 2013-14 | FY 2014-15 | |
| 1 | 35 | 046 | Customer Service and Business Assistance | Admin/Prog Mgmt | Admin Office/Units/SuppCoord Staff | 3.02 | 3.02 | 1b |
| 2 | 35 | 111 | Ensure Compliance | Call Center/CUT SMOG | Smoking Vehicle Complaints | 8.00 | 8.00 | IX,XV |
| 3 | 35 | 126 | Customer Service and Business Assistance | Clean Air Connections | Coord of region-wide community group | 1.00 | 1.00 | II,XV |
| 4 | 35 | 205 | Customer Service and Business Assistance | Environmental Education | Curriculum Dev/Project Coord | 0.25 | 0.25 | II,IX,XV |
| 5 | 35 | 240 | Customer Service and Business Assistance | Environmental Justice | Impl Board's EJ Pgrms/Policies | 2.00 | 2.00 | II,IV |
| 6 | 35 | 260 | Customer Service and Business Assistance | Fee Review | Cmte Mtg/Fee-Related Complaint | 0.50 | 0.50 | II,III,IV,XV |
| 7 | 35 | 280 | Policy Support | Advisory Group/Ethnic Comm | GB Ethnic Comm Advisory Group | 0.40 | 0.40 | II,IX |
| 8 | 35 | 281 | Policy Support | Advisory Group/Small Business | SBA Advisory Group Staff Support | 0.50 | 0.50 | IV,IX |
| 9 | 35 | 283 | Policy Support | Governing Board Policy | Brd sup/Respond to GB req | 0.55 | 0.55 | 1a |
| 10 | 35 | 345 | Policy Support | Goods Mvmt&Financial Incentive | Goods Movement & Financial Incentives Progr | 1.00 | 1.00 | IX |
| 11 | 35 | 350 | Operational Support | Graphic Arts | Graphic Arts | 2.00 | 2.00 | 1a |
| 12 | 35 | 381 | Customer Service and Business Assistance | Interagency Liaison | Interact Gov Agns/Promote SCAQMD | 0.15 | 0.15 | 1a,XV |
| 13 | 35 | 390 | Customer Service and Business Assistance | Intergov/Geographic Deployment | Dev/Impl Local Govt Outreach | 9.50 | 9.50 | II,IX |
| 14 | 35 | 412 | Policy Support | Legislation/Federal | Lobbying/Analyses/Tracking/Out | 0.25 | 0.25 | 1a |
| 15 | 35 | 413 | Policy Support | Legislation/Exec Office Support | Coord Legis w/ EO, EC, Mgmt | 0.25 | 0.25 | 1a |
| 16 | 35 | 414 | Policy Support | Legislation-Effects | Lobbying/Analyses/Tracking/Out | 0.80 | 0.80 | 1a,IX |
| 17 | 35 | 416 | Policy Support | Legislative Activities | Supp/Promote/Influence Legis/Adm | 0.50 | 0.50 | 1a,1b |
| 18 | 35 | 491 | Customer Service and Business Assistance | Outreach/Business | Chambers/Business Meetings | 1.00 | 1.00 | II,IV |
| 19 | 35 | 492 | Customer Service and Business Assistance | Public Education/Public Events | Pub Events/Conf/Rideshare Fair | 1.00 | 1.00 | II,IX,XV |
| 20 | 35 | 494 | Policy Support | Outreach/Collateral Development | Edits: Brds, Talk shows, Commercl | 0.60 | 0.60 | 1a,1b |
| 21 | 35 | 496 | Customer Service and Business Assistance | Outreach/Visiting Dignitary | Tours/Briefings-Dignitary | 0.25 | 0.25 | 1a |
| 22 | 35 | 514 | Customer Service and Business Assistance | Permit-Expired Permit Program | Assist w Permit Reinstatement | 0.30 | 0.30 | IV |
| 23 | 35 | 555 | Customer Service and Business Assistance | Public Information Center | Inform public of unhealthy air | 1.00 | 1.00 | II,VI,IX |
| 24 | 35 | 560 | Develop Programs | Public Notification | Public notif of rules/hearings | 0.50 | 0.50 | II,VI,IX |
| 25 | 35 | 565 | Customer Service and Business Assistance | Public Records Act | Comply w Public Req for Info | 0.10 | 0.10 | 1a |
| 26 | 35 | 679 | Customer Service and Business Assistance | Small Business Assistance | Small Business/Financial Assistance | 1.00 | 1.00 | III |
| 27 | 35 | 680 | Timely Review of Permits | Small Business/Permit Streamln | Asst sm bus to comply/SCAQMD req | 3.95 | 3.95 | II,III,IV,XV |
| 28 | 35 | 710 | Customer Service and Business Assistance | Speakers Bureau | Coordinate/conduct speeches | 0.10 | 0.10 | 1a |
| 29 | 35 | 717 | Policy Support | Student Interns | Student Interns | 0.10 | 0.10 | 1a,1b |
| 30 | 35 | 791 | Customer Service and Business Assistance | Toxics/AB2588 | Outreach/AB 2588 Air Toxics | 0.01 | 0.01 | X |
| 31 | 35 | 825 | Operational Support | Union Negotiations | Official Labor/Mgmt Negotiate | 0.01 | 0.01 | 1a |
| 32 | 35 | 826 | Operational Support | Union Steward Activities | Union Steward Activities | 0.01 | 0.01 | 1a |
| 33 | 35 | 855 | Operational Support | Web Tasks | Create/edit/review web content | 0.40 | 0.40 | 1a |

| | | | |
|--------------|-------|------|-------|
| Total | 41.00 | 0.00 | 41.00 |
|--------------|-------|------|-------|

| Legislative & Public Affairs Line Item Expenditure | | | | | | |
|---|---|-----------------------|---------------------------------|---------------------------------|--------------------------|------------------------|
| Major Object / Account # / Account Description | | FY 2012-13 Actuals | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2013-14 Estimate * | FY 2014-15 Proposed |
| Salary & Employee Benefits | | | | | | |
| 51000-52000 | Salaries | \$ 3,216,224 | \$ 3,249,309 | \$ 3,249,310 | \$ 3,215,838 | \$ 3,275,613 |
| 53000-55000 | Employee Benefits | 1,707,482 | 1,754,575 | 1,754,575 | 1,779,235 | 1,827,549 |
| Sub-total Salary & Employee Benefits | | \$ 4,923,707 | \$ 5,003,884 | \$ 5,003,885 | \$ 4,995,073 | \$ 5,103,161 |
| Services & Supplies | | | | | | |
| 67250 | Insurance | \$ - | \$ - | \$ - | \$ - | \$ - |
| 67300 | Rents & Leases Equipment | 12,933 | 6,500 | 6,500 | 3,577 | 6,500 |
| 67350 | Rents & Leases Structure | 10,065 | 9,000 | 9,000 | 9,000 | 9,000 |
| 67400 | Household | - | - | - | - | - |
| 67450 | Professional & Special Services | 1,175,844 | 1,132,716 | 1,122,716 | 1,072,716 | 1,145,316 |
| 67460 | Temporary Agency Services | 24,108 | 78,000 | 78,000 | 59,727 | 78,000 |
| 67500 | Public Notice & Advertising | 5,442 | 26,600 | 26,600 | 13,824 | 26,600 |
| 67550 | Demurrage | - | - | - | - | - |
| 67600 | Maintenance of Equipment | - | 9,000 | 9,000 | - | 9,000 |
| 67650 | Building Maintenance | - | - | - | - | - |
| 67700 | Auto Mileage | 13,958 | 23,800 | 23,800 | 13,958 | 23,800 |
| 67750 | Auto Service | - | - | - | - | - |
| 67800 | Travel | 60,188 | 43,200 | 63,200 | 43,200 | 43,200 |
| 67850 | Utilities | - | - | - | - | - |
| 67900 | Communications | 47,960 | 45,000 | 45,000 | 55,342 | 45,000 |
| 67950 | Interest Expense | - | - | - | - | - |
| 68000 | Clothing | - | - | - | - | - |
| 68050 | Laboratory Supplies | - | - | - | - | - |
| 68060 | Postage | 68,585 | 136,800 | 116,800 | 93,817 | 136,800 |
| 68100 | Office Expense | 87,593 | 41,800 | 41,800 | 41,800 | 41,800 |
| 68200 | Office Furniture | 4,131 | - | - | - | - |
| 68250 | Subscriptions & Books | 14,776 | 16,700 | 16,700 | 16,700 | 16,700 |
| 68300 | Small Tools, Instruments, Equipment | - | - | - | - | - |
| 68350 | Film | - | - | - | - | - |
| 68400 | Gas and Oil | - | - | - | - | - |
| 69500 | Training/Conference/Tuition/ Board Exp. | 12,624 | 8,000 | 18,000 | 18,000 | 8,000 |
| 69550 | Memberships | 52,990 | 25,500 | 25,500 | 25,500 | 25,500 |
| 69600 | Taxes | - | - | - | - | - |
| 69650 | Awards | 83,047 | 49,681 | 49,681 | 49,681 | 49,681 |
| 69700 | Miscellaneous Expenses | 45,218 | 41,500 | 41,500 | 41,052 | 41,500 |
| 69750 | Prior Year Expense | - | - | - | - | - |
| 69800 | Uncollectable Accounts Receivable | - | - | - | - | - |
| 89100 | Principal Repayment | - | - | - | - | - |
| Sub-total Services & Supplies | | \$ 1,719,460 | \$ 1,693,797 | \$ 1,693,797 | \$ 1,557,894 | \$ 1,706,397 |
| 77000 | Capital Outlays | \$ 8,000 | \$ - | \$ - | \$ - | \$ - |
| 79050 | Building Remodeling | \$ - | \$ - | \$ - | \$ - | \$ - |
| Total Expenditures | | \$ 6,651,167 | \$ 6,697,681 | \$ 6,697,682 | \$ 6,552,967 | \$ 6,809,558 |

* Estimates based on July 2013 through March 2014 actual expenditures and budget amendments.



**SOUTH COAST
AIR QUALITY MANAGEMENT DISTRICT**

SCIENCE & TECHNOLOGY ADVANCEMENT

MATT MIYASATO
DEPUTY EXECUTIVE OFFICER

DESCRIPTION OF MAJOR SERVICES:

The Office of Science and Technology Advancement (STA) is responsible for three key areas of operation: monitoring and analysis; technology research, development and implementation; and mobile source policy and regulatory analysis. The Monitoring and Analysis Division (MAD) maintains the SCAQMD's air monitoring network, operates the analytical laboratory and conducts source tests and evaluation, and responds to local community monitoring requests, including meteorological and sampling services as part of the SCAQMD's emergency response program. The Technology Advancement Office (TAO) implements the Clean Fuels Program to commercialize advanced engine control technologies and funding incentives programs such as the Carl Moyer, Lower Emission School Bus, and Proposition 1B Programs. Lastly, the Mobile Source Division (MSD) oversees the implementation of the SCAQMD Clean Fleet Vehicle Rules, provides support in the development of the mobile source control strategy for the AQMP, and provides input and comment on state and federal regulatory activities.

ACCOMPLISHMENTS:

RECENT:

- Continued implementation of the Carl Moyer, Surplus Off-Road Opt-In for NOx (SOON), Lower-Emission School Bus, and the Proposition 1B-Goods Movement Programs with total funding exceeding \$200 million annually. Implemented the Voucher Incentive Program (VIP) for replacement of on-road trucks on a first-come-first-served basis. Completed implementation of shore power projects at 25 berths at the Ports of Los Angeles, Long Beach, and Hueneme for \$59 million.
- Continued Clean Fuels Program, which is the research, development, demonstration and early deployment program for the SCAQMD. Executed over \$6 million in contracts with \$26 million in total project costs (1:3 leveraging). Projects in key technical areas include heavy-duty electric drive technologies, in-use emissions testing of heavy-duty trucks, and refueling infrastructure for alternative fuels (natural gas, electricity and hydrogen).
- Developed the mobile source strategies for the Final 2012 AQMP. Continued implementation of the SCAQMD Fleet Vehicle Rules, and implementation of incentive programs for old vehicle scrapping, off-road equipment repowers and replacement; replacement of Tier 0 locomotives with Tier 4 locomotives.
- Operated and maintained 41 air monitoring sites resulting in 70,000 valid pollutant data points per month, collection and analysis of 2,500 canisters for ambient VOCs and toxics and over 15,000 filters for components including mass, ions, carbon and metals in support of federal programs including those for NATTS, PAMS, NCORE and PM2.5 speciation. Deployed additional air monitors to address community odor concerns regarding oil reclamation activities, metals near metal finishing, metal recycling, and cement facilities. Conducted air monitoring study in support of Rule 444 and deployed

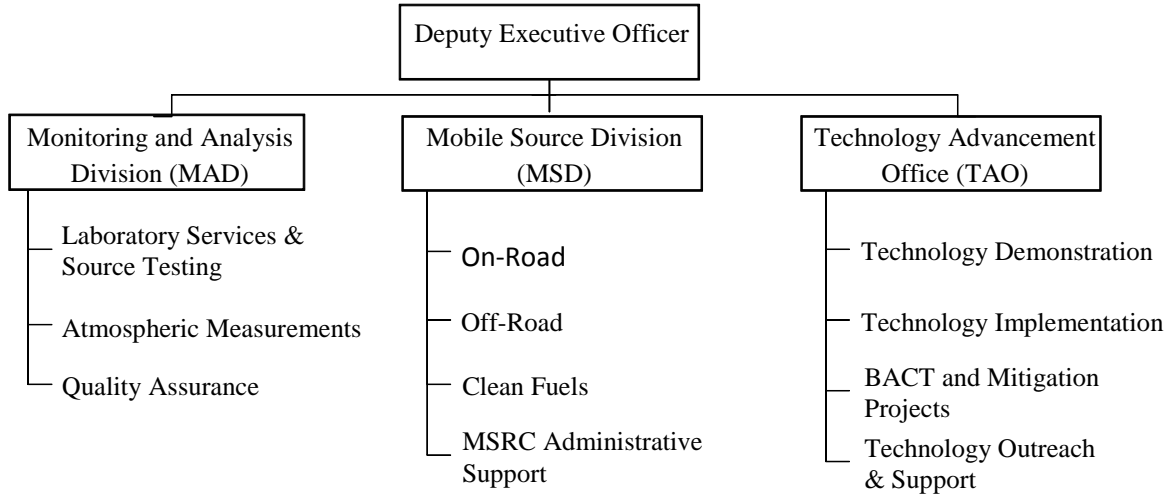
monitors to assess regional PM levels from frost prevention burning in the Coachella Valley. Concluded MATES IV sampling and analysis including conducting MATES IV local area monitoring studies (e.g. LAX and Mira Loma). Staff began new monitoring programs such as near road air monitoring and the hydrogen sulfide network near the Salton Sea. Over 2,100 samples were analyzed for asbestos from demolition sites and glass plates set out based on complaints and concerns about fallout (deposition). Analyzed approximately 500 products for VOC and HAP content, and conducted over 1,050 source test protocol and report evaluations, CEMS certifications, LAP application reviews and Source Test (ST) observations.

- Performed auditing of laboratory test methods in support of federal programs including those for NATTS, PAMS and PM2.5 Speciation; performed field auditing of monitoring stations in support of federal programs including those for NCORE, NATTS, PAMS, Criteria Pollutants, and PM2.5 Speciation; Performed 2011 data certification and review; and approved Criteria and PM2.5 QAPPs.

ANTICIPATED:

- Continue the development and demonstration of heavy-duty zero emission cargo transport trucks and a zero emission goods movement corridor utilizing overhead catenary to power heavy-duty hybrid electric trucks near the Ports.
- Continue the implementation of the VIP on a first-come-first-served basis; and solicit for heavy-duty on- and off-road projects under the “Year 16” Carl Moyer and the Proposition 1B-Goods Movement Programs.
- Increase deployment of cleaner construction equipment, locomotives, and on-road heavy-duty vehicles through the continued implementation of funding incentives programs, compliance with SCAQMD Clean Fleet Vehicle Rules, and identification of future mobile source strategies in the Final 2012 AQMP.
- Deploy PM2.5 monitor in the Coachella Valley for assessing potential impacts from CPV Sentinel. Conduct monitoring surveys of drilling, acidizing and fracking processes in Rule 1148.2. Deploy additional near road monitors. The data management system that receives and validates the incoming data from the air monitoring stations and special monitoring locations will be enhanced and staff will continue source test protocol and report evaluations, CEMS certifications, LAP application reviews and ST observations.
- Work with other air districts through CAPCOA for the reauthorization of the AB 923 funds for the Carl Moyer Program until December 31, 2023, with the adoption of SB 11 and AB 8.

ORGANIZATIONAL CHART:



POSITION SUMMARY: 164 FTEs

| Unit | Current (FY 2013-14) | Changes | Proposed (FY 2014-15) |
|------------------------|----------------------|----------|-----------------------|
| Office Administration | 6 | - | 6 |
| Monitoring & Analysis | 108 | - | 108 |
| Mobile Source Division | 14 | - | 14 |
| Technology Advancement | 36 | - | 36 |
| Total | 164 | - | 164 |

STAFFING DETAIL:

2014-15 Requested Staffing

| <u>Position</u> | <u>Title</u> |
|-----------------|---|
| 1 | Administrative Secretary |
| 25 | Air Quality Chemist |
| 10 | Air Quality Engineer II |
| 2 | Air Quality Inspector II |
| 20 | Air Quality Instrument Specialist I |
| 14 | Air Quality Instrument Specialist II |
| 12 | Air Quality Specialist |
| 2 | Assistant Deputy Executive Officer/Science & Technology Advancement |
| 1 | Atmospheric Measurement Manager |
| 1 | Clean Fuels Officer |
| 1 | Community Relations Manager |
| 5 | Contracts Assistant |
| 1 | Deputy Executive Officer/Science & Technology Advancement |
| 1 | Director of Technology Implementation |
| 4 | Laboratory Technician |
| 1 | Meteorologist Technician |
| 5 | Office Assistant |
| 3 | Planning and Rules Manager |
| 3 | Principal Air Quality Chemist |
| 3 | Principal Air Quality Instrument Specialist |
| 13 | Program Supervisor |
| 1 | Quality Assurance Manager |
| 5 | Secretary |
| 3 | Senior Administrative Secretary |
| 6 | Senior Air Quality Chemist |
| 3 | Senior Air Quality Engineer |
| 8 | Senior Air Quality Instrument Specialist |
| 1 | Senior Enforcement Manager |
| 1 | Senior Office Assistant |
| 1 | Senior Public Information Specialist |
| 1 | Senior Staff Specialist |
| 2 | Staff Assistant |
| 3 | Staff Specialist |
| <u>1</u> | Supervising Air Quality Engineer |
| 164 | Total Requested Positions |

**Science & Technology Advancement
Work Program by Office**

| # | Program Code | Program Category | Goal | Program | Activities | FTEs | | Revenue Categories |
|----|--------------|------------------|------------------------------|----------------------------------|---|------------|----------------|--------------------|
| | | | | | | FY 2013-14 | +/- FY 2014-15 | |
| 1 | 44 | 003 | Advance Clean Air Technology | AB2766/MSRC | Mob Src Review Comm Prog Admin | 1.00 | 1.00 | IX |
| 2 | 44 | 004 | Advance Clean Air Technology | AB2766/MSRC/Contract Admin | AB2766 Admin Discretionary Prog | 3.00 | 3.00 | IX |
| 3 | 44 | 009 | Develop Programs | AB 1318 Mitigation | AB 1318 Projects Admn/Impl | 0.75 | 0.75 | XVII |
| 4 | 44 | 012 | Advance Clean Air Technology | AQMP/Control Tech Assessment | Tech Supp: Quantify Cost Effec | 0.10 | 0.10 | VIII |
| 5 | 44 | 015 | Ensure Compliance | Acid Rain Program | Acid Rain CEMS Eval/Cert | 0.50 | 0.50 | II,IV |
| 6 | 44 | 038 | Monitoring Air Quality | Admin/Office Mgmt/Monitoring | Overall Program Mgmt/Coord | 0.90 | 0.90 | 1b |
| 7 | 44 | 039 | Advance Clean Air Technology | Admin/Office Mgt/Tech Adv | Admin Support/Coordination | 0.77 | 0.77 | VIII |
| 8 | 44 | 041 | Policy Support | Admin/Office Mgmt/Policy Supp | Overall Policy Supp/Mgmt/Coord | 0.49 | 0.49 | 1b |
| 9 | 44 | 042 | Ensure Compliance | Admin/Office Mgmt/Compliance | Compliance: Assign/Manage/Supp | 0.37 | 0.37 | 1b |
| 10 | 44 | 043 | Develop Rules | Admin/Office Mgmt/Rules | Rules: Assign/Manage/Supp | 0.15 | 0.15 | 1b |
| 11 | 44 | 046 | Monitoring Air Quality | Admin/Program Management | STA Program Administration | 2.00 | 2.00 | 1b |
| 12 | 44 | 048 | Advance Clean Air Technology | Admin/Prog Mgmt/Tech Advance | Overall TA Program Mgmt/Coord | 1.55 | 1.55 | VIII |
| 13 | 44 | 052 | Operational Support | Admin/Prog Mgmt/Mob Src | Admin: Mobile Source | 1.80 | 1.80 | 1b |
| 14 | 44 | 063 | Monitoring Air Quality | Ambient Air Analysis | Analyze Criteria/Tox/Pollutants | 11.91 | 11.91 | II,V,IX |
| 15 | 44 | 064 | Monitoring Air Quality | Ambient Network | Air Monitoring/Toxics Network | 18.05 | 18.85 | IV,V,IX |
| 16 | 44 | 065 | Monitoring Air Quality | Air Quality Data Management | AM Audit/Validation/Reporting | 1.00 | 1.00 | II,V,IX |
| 17 | 44 | 066 | Advance Clean Air Technology | AQIP Marine SCR DPF | AQIP Marine SCR DPF Admin/Impl | 0.15 | 0.15 | IX |
| 18 | 44 | 067 | Monitoring Air Quality | Ambient Lead Monitoring | Lead Monitoring/Analysis/Reporting | 0.50 | 0.50 | IV |
| 19 | 44 | 069 | Develop Programs | AQIP Evaluation | AQIP Contract Admin/Evaluation | 0.65 | 0.65 | IX |
| 20 | 44 | 072 | Ensure Compliance | Arch Ctgs - End User | Sample Analysis/Rpts | 1.00 | 1.00 | XVIII |
| 21 | 44 | 073 | Monitoring Air Quality | Arch Ctgs - Other | Sample Analysis/Rpts | 2.00 | 2.00 | XVIII |
| 22 | 44 | 081 | Monitoring Air Quality | Air Filtration EPA | Air Filtration EPA/Admn/Impl | 0.25 | 0.25 | V |
| 23 | 44 | 082 | Monitoring Air Quality | Air Filtration Other | Air Filtration Other/Admn/Impl | 0.50 | 0.50 | XVII |
| 24 | 44 | 084 | Monitoring Air Quality | Bik Carbon Stdy EPA | EPA Bick Carbon Climate Study | 0.00 | 0.20 | XVII |
| 25 | 44 | 095 | Advance Clean Air Technology | CA Natural Gas Veh Partnership | CA Natural Gas Veh Partnership | 0.05 | 0.05 | VIII |
| 26 | 44 | 105 | Ensure Compliance | CEMS Certification | CEMS Review/Approval | 6.15 | 6.15 | III,VI |
| 27 | 44 | 130 | Advance Clean Air Technology | Clean Fuels/Contract Admin | Admin/Project Supp for TA Cont | 3.40 | 3.40 | VIII |
| 28 | 44 | 132 | Advance Clean Air Technology | Clean Fuels/Mobile Sources | Dev/Impl Mobile Src Proj/Demo | 5.30 | 5.10 | VIII |
| 29 | 44 | 134 | Advance Clean Air Technology | Clean Fuels/Stationary Combust | Dev/Demo Clean Combustion Tech | 0.70 | 0.70 | VIII |
| 30 | 44 | 135 | Advance Clean Air Technology | Clean Fuels/Stationary Energy | Dev/Demo Alt Clean Energy | 0.70 | 0.70 | VIII |
| 31 | 44 | 136 | Advance Clean Air Technology | Clean Fuels/Tech Transfer | Disseminate Low Emiss CF Tech | 1.45 | 1.45 | VIII |
| 32 | 44 | 151 | Monitoring Air Quality | Community Scale Air Toxics Study | EPA-funded airports air monit | 1.00 | (1.00) | XVII |
| 33 | 44 | 175 | Ensure Compliance | DB/Computerization | Develop Systems/Database | 0.44 | 0.44 | II,IV,VI |
| 34 | 44 | 188 | Advance Clean Air Technology | DERA FY 13 Veh Repl | DERA Vehicle Repl Admin/Impl | 0.00 | 0.20 | XVII |
| 35 | 44 | 190 | Advance Clean Air Technology | Diesel Projects EPA | Diesel Projects EPA/Admn/Impl | 0.11 | 0.11 | V |
| 36 | 44 | 240 | Monitoring Air Quality | Environmental Justice | Implement Environmental Justice | 0.45 | 0.45 | II,IX |
| 37 | 44 | 276 | Policy Support | Advisory Group/Technology Adva | Tech Adv Advisory Group Supp | 0.10 | 0.10 | VIII |
| 38 | 44 | 361 | Advance Clean Air Technology | HD Trucks DOE ARRA | DOE HD Trucks Admin (ARRA) | 2.00 | 2.00 | XVII |
| 39 | 44 | 396 | Develop Programs | Lawnmower Exchange | Lawn Mower Admin/Impl/Outreach | 0.30 | 0.30 | XVII |
| 40 | 44 | 410 | Policy Support | Legislation | Support Pollution Reduction thru Legislatio | 0.50 | 0.50 | IX |
| 41 | 44 | 424 | Advance Clean Air Technology | LNG Trucks CEC | LNG Trucks Admin CEC | 1.00 | 1.00 | IX |
| 42 | 44 | 439 | Monitoring Air Quality | MATES IV | MATES IV | 0.50 | (0.50) | VIII |
| 43 | 44 | 448 | Develop Programs | Mobile Src Strategies-Off Road | CARB Off-Road Mob Src ctrl strategy for SIP | 1.00 | 1.00 | XVII |

**Science & Technology Advancement
Work Program by Office**

| # | Program Code | Program Category | Goal | Program | Activities | FTEs | | Revenue Categories |
|----|--------------|------------------------------------|------|---------------------------------|---|------------|----------------|--------------------|
| | | | | | | FY 2013-14 | +/- FY 2014-15 | |
| 44 | 44 | Develop Rules | I | Mob Src/SCAQMD Rulemaking | Prepare SCAQMD Mob Src rulemaking proposals | 2.00 | 2.00 | IX |
| 45 | 44 | Ensure Compliance | I | Microscopic Analysis | Asbestos/PM/Metals Analysis | 3.00 | 3.00 | VI |
| 46 | 44 | Develop Programs | I | Mob Src/CARB/EPA Monitoring | CARB/US EPA Mob Src Fuel Policies | 1.50 | 1.50 | IX |
| 47 | 44 | Develop Programs | I | Mob Src/CEC/US DOE Monitoring | CEC/US DOE Mob Src rulemaking proposals | 1.00 | 1.00 | IX, XVII |
| 48 | 44 | Advance Clean Air Technology | I | Mob Src: Emiss Inven Method | Rvw CARB/US EPA emissions inven methodology | 1.50 | 1.50 | VIII, IX |
| 49 | 44 | Policy Support | I | Mob Src: Greenhs Gas Reduc Meas | Provide comments on mob src portion of AB32 | 1.39 | 1.39 | XVII |
| 50 | 44 | Develop Rules | I | MS & AQMP Control Strategies | AQMP Control Strategies | 0.30 | 0.30 | VIII |
| 51 | 44 | Advance Clean Air Technology | I | Mob Src/C Moyer Adm/Outreach | Carl Moyer: Impl/Admin Grant | 5.65 | 5.65 | IX |
| 52 | 44 | Develop Programs | I | Mobile Source Strategies | Implement Fleet Rules | 1.00 | 1.00 | VIII |
| 53 | 44 | Advance Clean Air Technology | I | Mob Src/C Moyer Impl/Prg Dev | Moyer/Implement Program Dev | 2.80 | 2.80 | IX |
| 54 | 44 | Advance Clean Air Technology | I | VIP Admin | VIP Admin/Outreach/Impl | 0.80 | 0.80 | IX |
| 55 | 44 | Monitoring Air Quality | I | NATTS(Natl Air Tox Trends Sta) | NATTS (Natl Air Tox Trends) | 1.50 | 1.50 | II, V, IX |
| 56 | 44 | Monitoring Air Quality | I | Near Roadway Mon | Near Roadway Monitoring | 1.50 | 1.50 | IV, V, IX |
| 57 | 44 | Advance Clean Air Technology | I | Plug-in Hybrid EV DOE ARRA | DOE Plug-in Hybrid EV Admin (ARRA) | 0.75 | 0.75 | V |
| 58 | 44 | Ensure Compliance | I | PM2.5 Program | Est/Operate/Maint PM2.5 Network | 4.80 | 11.30 | II, V, IX |
| 59 | 44 | Monitoring Air Quality | I | PM2.5 Program | Analyze PM2.5 Samples | 6.00 | 6.00 (6.00) | II, V, IX |
| 60 | 44 | Monitoring Air Quality | I | PM Sampling Program (EPA) | PM Sampling Program - Addition | 10.60 | 10.60 | V |
| 61 | 44 | Monitoring Air Quality | I | PM Sampling Spec | PM Sampling Special Events | 0.10 | 0.10 | V |
| 62 | 44 | Monitoring Air Quality | I | Photochemical Assessment | Photochemical Assess & Monitor | 3.00 | 3.00 | V, IX |
| 63 | 44 | Develop Programs | I | Prop 1B: Goods Movement | Prop 1B: Goods Movement | 5.70 | 5.70 | IX |
| 64 | 44 | Develop Programs | II | Prop 1B: Low Emiss Sch Bus | Prop 1B: Low Emiss Sch Bus | 1.00 | 0.50 | IX |
| 65 | 44 | Timely Review of Permits | I | Protocols/Reports/Plans | Eval Test Protocols/Cust Svc | 0.10 | 0.10 | III, IV |
| 66 | 44 | Timely Review of Permits | I | Protocols/Reports/Plans | Eval Test Protocols/Compliance | 6.15 | 6.15 | IV, VI |
| 67 | 44 | Customer Service and Business Assi | III | Public Records Act | Comply w/ Public Req for Info | 0.17 | 0.17 | 1a |
| 68 | 44 | Monitoring Air Quality | I | Quality Assurance | Quality Assurance Branch | 3.00 | 3.00 | II, V, IX |
| 69 | 44 | Develop Rules | I | Rulemaking/BACT | Dev/Amend BACT Guidelines | 2.00 | 2.00 | II |
| 70 | 44 | Develop Rules | I | Rulemaking/Support PRA | Assist PRA w/ Rulemaking | 0.05 | 0.05 | II |
| 71 | 44 | Monitoring Air Quality | I | Salton Sea Monit | Mon/Analyze Hydrogen Sulfide | 0.25 | 0.25 | XVII |
| 72 | 44 | Advance Clean Air Technology | I | School Bus/Lower Emission Prog | School Bus Program Oversight | 0.20 | 0.50 | VIII |
| 73 | 44 | Ensure Compliance | I | Source Testing/Compliance | Conduct ST/Prov Data/Compl | 2.25 | 2.25 | VI |
| 74 | 44 | Customer Service and Business Assi | I | Source Testing/Customer Svc | Conduct ST/Prov Data/Cust Svc | 0.05 | 0.05 | VI |
| 75 | 44 | Develop Programs | I | ST Methods Development | Eval ST Methods/Vali Data | 0.95 | 0.95 | II |
| 76 | 44 | Ensure Compliance | I | ST Sample Analysis/Compliance | Analyze ST Samples/Air Prgrms | 4.00 | 4.00 | VI |
| 77 | 44 | Develop Programs | I | ST Sample Analysis/Air Program | Analyze ST Samples/Compliance | 0.25 | 0.25 | II |
| 78 | 44 | Develop Rules | I | ST Sample Analysis/Air Program | Analyze ST Samples/Rules | 0.25 | 0.25 | II |
| 79 | 44 | Ensure Compliance | I | VOC Sample Analysis/Compliance | VOC Analysis & Rptg/Compliance | 7.00 | 7.00 | IV, XV |
| 80 | 44 | Develop Rules | I | VOC Sample Analysis/Rules | VOC Analysis & Rptg/Rules | 0.25 | 0.25 | II, XV |
| 81 | 44 | Customer Service and Business Assi | I | VOC Sample Analysis/SBA/Other | VOC Analysis & Rptg/Cust Svc | 0.50 | 0.50 | VI |
| 82 | 44 | Monitoring Air Quality | II | Spec Monitoring/Emerg Response | Emergency Response | 0.50 | 0.50 | II |
| 83 | 44 | Ensure Compliance | I | Special Monitoring | Rule 403 Compliance Monitoring | 2.20 | 2.20 | IV, IX, XV |
| 84 | 44 | Timely Review of Permits | I | Permit Processing/Support EAC | Assist EAC w/ Permit Process | 0.05 | 0.05 | III |
| 85 | 44 | Advance Clean Air Technology | I | Target Air Shed EPA | Targeted Air Shed Admin/impl | 0.15 | 0.15 | XVII |
| 86 | 44 | Advance Clean Air Technology | I | Tech Adv/Commercialization | Assess CFS/Adv Tech Potential | 0.25 | 0.25 | VIII |
| 87 | 44 | Advance Clean Air Technology | I | Tech Adv/Non-Combustion | Dev/Demo Non-Combustion Tech | 0.10 | 0.10 | VIII |
| 88 | 44 | Ensure Compliance | I | Toxics/AB2588 | Eval Protocols/Methods/ST | 1.25 | 1.25 | X |
| 89 | 44 | Ensure Compliance | I | Toxics/Engineering | R1401 Toxics/HRA Prot/Rpt Eval | 0.05 | 0.05 | X |
| 90 | 44 | Advance Clean Air Technology | I | Transportation Research | Transport Research/Adv Systems | 0.50 | 0.50 | VIII |
| 91 | 44 | Monitoring Air Quality | II | TraPac Air Filtr Prg | Admin/Tech Suppt/Reptg/Monitor | 1.00 | 1.00 | XVII |
| 92 | 44 | Operational Support | III | Union Negotiations | Labor/Mgmt Negotiations | 0.05 | 0.05 | 1a |
| 93 | 44 | Operational Support | III | Union Steward Activities | Rep Employees in Grievance Act | 0.05 | 0.05 | 1a |

Total 164.00 0.00 164.00

| Science & Technology Advancement Line Item Expenditure | | | | | | |
|---|---|-----------------------|---------------------------------|---------------------------------|--------------------------|------------------------|
| Major Object / Account # / Account Description | | FY 2012-13 Actuals | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2013-14 Estimate * | FY 2014-15 Proposed |
| Salary & Employee Benefits | | | | | | |
| 51000-52000 | Salaries | \$ 14,006,598 | \$ 13,695,855 | \$ 13,608,401 | \$ 13,831,462 | \$ 13,924,124 |
| 53000-55000 | Employee Benefits | 6,405,489 | 6,813,218 | 6,813,218 | \$ 6,702,782 | 7,207,167 |
| Sub-total Salary & Employee Benefits | | \$ 20,412,087 | \$ 20,509,073 | \$ 20,421,619 | \$ 20,534,244 | \$ 21,131,291 |
| Services & Supplies | | | | | | |
| 67250 | Insurance | \$ 14,575 | \$ - | \$ 23,849 | \$ 23,849 | \$ - |
| 67300 | Rents & Leases Equipment | 205,780 | 16,800 | 227,826 | 156,826 | 16,800 |
| 67350 | Rents & Leases Structure | 156,348 | 150,900 | 157,400 | 157,400 | 150,900 |
| 67400 | Household | 450 | 500 | 500 | 475 | 500 |
| 67450 | Professional & Special Services | 1,354,422 | 92,600 | 1,361,053 | 873,560 | 80,000 |
| 67460 | Temporary Agency Services | 741,257 | 141,600 | 748,000 | 748,000 | 141,600 |
| 67500 | Public Notice & Advertising | 29,759 | 37,000 | 77,500 | 81,000 | 37,000 |
| 67550 | Demurrage | 69,084 | 40,000 | 73,258 | 63,258 | 40,000 |
| 67600 | Maintenance of Equipment | 507,890 | 180,000 | 350,927 | 340,185 | 180,000 |
| 67650 | Building Maintenance | 33,227 | 20,000 | 185,500 | 77,469 | 20,000 |
| 67700 | Auto Mileage | 111,742 | 3,909 | 93,546 | 99,320 | 3,909 |
| 67750 | Auto Service | - | - | 2,000 | 740 | - |
| 67800 | Travel | 70,761 | 48,403 | 118,503 | 89,014 | 48,403 |
| 67850 | Utilities | - | - | 64,217 | 64,217 | - |
| 67900 | Communications | 211,338 | 189,636 | 229,636 | 231,715 | 189,636 |
| 67950 | Interest Expense | - | - | - | - | - |
| 68000 | Clothing | 4,770 | 4,000 | 7,254 | 7,254 | 4,000 |
| 68050 | Laboratory Supplies | 512,451 | 270,000 | 549,682 | 521,403 | 270,000 |
| 68060 | Postage | 33,269 | 22,318 | 42,318 | 42,318 | 22,318 |
| 68100 | Office Expense | 83,283 | 27,693 | 79,913 | 75,913 | 31,393 |
| 68200 | Office Furniture | - | - | 19,679 | 16,679 | - |
| 68250 | Subscriptions & Books | 2,780 | 1,527 | 4,027 | 3,060 | 1,527 |
| 68300 | Small Tools, Instruments, Equipment | 85,530 | 35,000 | 207,734 | 142,892 | 35,000 |
| 68350 | Film | - | 100 | 100 | - | - |
| 68400 | Gas and Oil | - | - | - | - | - |
| 69500 | Training/Conference/Tuition/ Board Exp. | 4,457 | 9,000 | 15,500 | 15,000 | 9,000 |
| 69550 | Memberships | 93,034 | 7,250 | 94,750 | 76,819 | 7,250 |
| 69600 | Taxes | 14,318 | 7,000 | 28,628 | 23,328 | 7,000 |
| 69650 | Awards | 2,400 | 2,700 | 2,700 | 2,700 | - |
| 69700 | Miscellaneous Expenses | 11,288 | 3,500 | 21,500 | 9,303 | 2,600 |
| 69750 | Prior Year Expense | (57,105) | - | - | - | - |
| 69800 | Uncollectable Accounts Receivable | - | - | - | - | - |
| 89100 | Principal Repayment | - | - | - | - | - |
| Sub-total Services & Supplies | | \$ 4,297,107 | \$ 1,311,436 | \$ 4,787,500 | \$ 3,943,697 | \$ 1,298,836 |
| 77000 | Capital Outlays | \$ 786,615 | \$ 60,000 | \$ 801,613 | \$ 801,613 | \$ - |
| 79050 | Building Remodeling | \$ - | \$ - | \$ - | \$ - | \$ - |
| Total Expenditures | | \$ 25,495,808 | \$ 21,880,509 | \$ 26,010,732 | \$ 25,279,554 | \$ 22,430,127 |

* Estimates based on July 2013 through March 2014 actual expenditures and budget amendments.



**SOUTH COAST
AIR QUALITY MANAGEMENT DISTRICT**

ENGINEERING & COMPLIANCE

**MOHSEN NAZEMI
DEPUTY EXECUTIVE OFFICER**

DESCRIPTION OF MAJOR SERVICES:

The office of Engineering & Compliance (E&C) is primarily responsible for processing applications for Permits to Construct & Operate, compliance inspections and special services. The permit processing activities involve over 400 major facilities that have been issued Title V Federal Operating permits, almost 300 facilities in the RECLAIM program, and over 27,000 large and small business operations. The compliance staff conducts routine unannounced field inspections to verify compliance with SCAQMD, state and federal rules and regulations, and responds to air quality complaints received. In addition, staff also participate in Emergency Response activities with other agencies, conduct training classes, assist with Economic Development and Business Retention programs, and evaluate and implement Permit Streamlining activities.

ACCOMPLISHMENTS

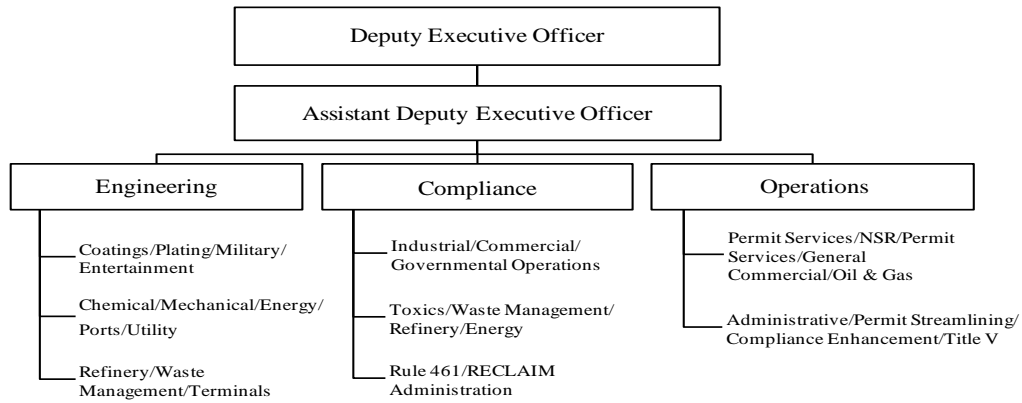
RECENT:

- Processed 8,925 applications for Permits, Plans, ERCs, and timely renewal of TV permits.
- Conducted 25,568 site inspections for compliance determination.
- Conducted 4,098 inspections for equipment registered pursuant to Portable Equipment Registration Program (PERP) and 1,082 asbestos inspections.
- Conducted 72 training classes for businesses, public, and SCAQMD staff.
- Received and processed 8,730 air quality complaints.

ANTICIPATED:

- Process 8,800 applications for Permits, Plans, ERCs, and timely renewal of TV permits.
- Conduct 22,000 site inspections for compliance determination.
- Conduct 3,500 equipment registered pursuant to Portable Equipment Registration Program (PERP) and 2,200 asbestos inspections.
- Conduct 40 training classes for businesses, public, and SCAQMD staff.
- Respond timely to all air quality complaints.

ORGANIZATIONAL CHART:



POSITION SUMMARY: 306 FTEs

| Unit | Current (FY 2013-14) | Change | Proposed (FY 2014-15) |
|----------------|----------------------|----------|-----------------------|
| Administration | 13 | - | 13 |
| Engineering | 104 | - | 104 |
| Compliance | 158 | - | 158 |
| Operations | 31 | - | 31 |
| Total | 306 | - | 306 |

STAFFING DETAIL:

2014-15 Requested Staffing

| <u>Position</u> | <u>Title</u> |
|-----------------|---|
| 15 | Air Quality Analysis and Compliance Supervisor |
| 91 | Air Quality Engineer II |
| 89 | Air Quality Inspector II |
| 14 | Air Quality Inspector III |
| 2 | Air Quality Specialist |
| 1 | Assistant Deputy Executive Officer/Engineering & Compliance |
| 2 | Data Technician |
| 1 | Deputy Executive Officer/Engineering & Compliance |
| 12 | Office Assistant |
| 1 | Principal Office Assistant |
| 7 | Secretary |
| 2 | Senior Administrative Secretary |
| 19 | Senior Air Quality Engineer |
| 3 | Senior Air Quality Engineering Manager |
| 4 | Senior Enforcement Manager |
| 20 | Senior Office Assistant |
| 5 | Staff Specialist |
| 17 | Supervising Air Quality Inspector |
| <u>1</u> | Supervising Office Assistant |
| 306 | Total Requested Positions |

**Engineering & Compliance
Work Program by Office**

| # | Program Code | Program Category | Goal | Program | Activities | FTEs +/- | | Revenue Categories |
|----|--------------|------------------|--|---------|--------------------------------|------------|------------|--------------------|
| | | | | | | FY 2013-14 | FY 2014-15 | |
| 1 | 50 | 038 | Customer Service and Business Assistance | I | Admin/Office Management | 4.00 | 4.00 | 1b |
| 2 | 50 | 047 | Customer Service and Business Assistance | I | Admin/Operations Support | 5.00 | 5.00 | 1b |
| 3 | 50 | 070 | Ensure Compliance | I | CARB PERP Program | 7.00 | 7.00 | XIX |
| 4 | 50 | 071 | Ensure Compliance | I | Arch Cigs - Admin | 0.10 | 0.10 | XVIII |
| 5 | 50 | 072 | Ensure Compliance | I | Arch Cigs - End User | 0.10 | 0.10 | XVIII |
| 6 | 50 | 073 | Ensure Compliance | I | Arch Cigs - Other | 4.50 | 4.50 | XVIII |
| 7 | 50 | 148 | Policy Support | I | Climate Change | 0.50 | 0.50 | II,IX |
| 8 | 50 | 152 | Ensure Compliance | III | Compliance/IM Related Activiti | 0.50 | 0.50 | II |
| 9 | 50 | 155 | Ensure Compliance | I | Compliance Guidelines | 0.50 | 0.50 | II |
| 10 | 50 | 156 | Ensure Compliance | I | Perm Proc/Info to Compliance | 3.00 | 3.00 | II,IV |
| 11 | 50 | 157 | Ensure Compliance | I | Compliance/Special Projects | 5.00 | 5.00 | IV |
| 12 | 50 | 158 | Ensure Compliance | I | Compliance Testing | 1.00 | 1.00 | II |
| 13 | 50 | 200 | Customer Service and Business Assistance | I | Economic Dev/Bus Retention | 0.10 | 0.10 | III |
| 14 | 50 | 210 | Monitoring Air Quality | II | Emergency Response | 0.25 | 0.25 | II,XV |
| 15 | 50 | 253 | Timely Review of Permits | I | ERC Appl Processing | 3.50 | 3.50 | III |
| 16 | 50 | 260 | Customer Service and Business Assistance | III | Fee Review | 0.45 | 0.45 | II,III,IV |
| 17 | 50 | 276 | Policy Support | I | Board Committees | 0.25 | 0.25 | 1a |
| 18 | 50 | 365 | Ensure Compliance | I | Hearing Bd/Variations | 1.50 | 1.50 | VII |
| 19 | 50 | 367 | Timely Review of Permits | I | Hearing Board/Appeals | 0.50 | 0.50 | III |
| 20 | 50 | 375 | Ensure Compliance | I | Inspections | 79.20 | 79.20 | IV,V,XV |
| 21 | 50 | 377 | Ensure Compliance | I | Inspections/RECLAIM Audits | 23.80 | 23.80 | II,IV |
| 22 | 50 | 416 | Policy Support | I | Legislative Activities | 0.25 | 0.25 | 1a |
| 23 | 50 | 425 | Customer Service and Business Assistance | I | Lobby Permit Services | 1.00 | 1.00 | III |
| 24 | 50 | 475 | Timely Review of Permits | I | NSR Implementation | 2.50 | 2.50 | II,III,V |
| 25 | 50 | 476 | Timely Review of Permits | I | NSR Data Clean Up | 0.50 | 0.50 | II |
| 26 | 50 | 515 | Timely Review of Permits | I | Perm Proc/Non TV/Non RECLAIM | 55.30 | 55.30 | III |
| 27 | 50 | 517 | Timely Review of Permits | I | Permit Services | 12.50 | 12.50 | III |
| 28 | 50 | 518 | Timely Review of Permits | I | RECLAIM Non-Title V | 4.50 | 4.50 | III,IV,XV |
| 29 | 50 | 519 | Timely Review of Permits | I | Perm Proc/Title III (Non TV) | 1.00 | 1.00 | III |
| 30 | 50 | 520 | Customer Service and Business Assistance | I | Perm Proc/Pre-Appl Mtg Outreac | 4.00 | 4.00 | III |
| 31 | 50 | 521 | Timely Review of Permits | I | Perm Proc/Expedited Permit | 0.50 | 0.50 | III |
| 32 | 50 | 523 | Timely Review of Permits | I | Permit Streamlining | 3.75 | 3.75 | III |
| 33 | 50 | 538 | Ensure Compliance | I | Port Comm AQ Enforcement | 0.50 | 0.50 | IX |
| 34 | 50 | 542 | Ensure Compliance | I | Prop 1B:Goods Movement | 0.30 | 0.30 | IX |
| 35 | 50 | 550 | Ensure Compliance | II | Public Complaints/Brea kdowns | 10.00 | 10.00 | II,V,V,XV |
| 36 | 50 | 565 | Customer Service and Business Assistance | III | Public Records Act | 0.50 | 0.50 | 1a |
| 37 | 50 | 605 | Ensure Compliance | I | RECLAIM/Admin Support | 10.00 | 10.00 | II,III,IV |
| 38 | 50 | 607 | Timely Review of Permits | I | RECLAIM & Title V | 12.65 | (0.25) | III |
| 39 | 50 | 650 | Develop Rules | I | Rulemaking | 0.50 | 0.50 | II,XV |
| 40 | 50 | 657 | Develop Rules | I | Rulemaking/Support PRA | 0.50 | 0.50 | II |
| 41 | 50 | 678 | Ensure Compliance | I | School Siting | 1.00 | 1.00 | II |
| 42 | 50 | 680 | Ensure Compliance | I | Small Business Assistance | 0.50 | 0.50 | IV |
| 43 | 50 | 690 | Customer Service and Business Assistance | I | Source Education | 2.80 | 2.80 | III,IV,V,XV |

| Engineering & Compliance Work Program by Office | | | | | | | | | |
|--|--------------|------------------|--------------------------|-------------------------------|---------------------------------|---------------|-------------|---------------|--------------------|
| # | Program Code | Program Category | Goal | Program | Activities | FY 2013-14 | FTEs +/- | FY 2014-15 | Revenue Categories |
| 44 | 50 | 728 | Timely Review of Permits | Perm Proc/IM Programming | Assist IM: Design/Review/Test | 2.00 | | 2.00 | II, III, IV |
| 45 | 50 | 751 | Ensure Compliance | Title III Inspections | Title III Comp/Insp/Follow Up | 0.50 | | 0.50 | IV |
| 46 | 50 | 752 | Develop Rules | Title III Rulemaking | Title III Dev/Implement Rules | 0.25 | | 0.25 | II |
| 47 | 50 | 771 | Ensure Compliance | Title V Inspections | Title V Compl/Inspect/Follow Up | 11.00 | | 11.00 | II, IV |
| 48 | 50 | 773 | Develop Rules | Title V & NSR Rulemaking-Supp | Title V Rules Dev/Amend/Impl | 0.25 | | 0.25 | II |
| 49 | 50 | 774 | Timely Review of Permits | TV/Non-RECLAIM | Process Title V Only Permits | 18.00 | | 18.00 | III |
| 50 | 50 | 775 | Timely Review of Permits | Title V - Admin | Title V Administration | 1.00 | | 1.00 | III |
| 51 | 50 | 791 | Ensure Compliance | Toxics/AB2588 | AB2588 Rev Rpts/Risk Redplans | 0.00 | 0.25 | 0.25 | X |
| 52 | 50 | 805 | Operational Support | Training | Dist/Org Unit Training | 6.00 | | 6.00 | 1b |
| 53 | 50 | 825 | Operational Support | Union Negotiations | Official Labor/Mgmt Negotiate | 0.10 | | 0.10 | 1a |
| 54 | 50 | 826 | Operational Support | Union Steward Activities | Rep Employees in Grievance Act | 0.10 | | 0.10 | 1a |
| 55 | 50 | 850 | Ensure Compliance | VEE Trains | Smoking Trains-Comp/Inspec/FU | 0.50 | | 0.50 | IX, XV |
| 56 | 50 | 855 | Operational Support | Web Tasks | Creation/Update of Web Content | 0.50 | | 0.50 | 1a |
| Total | | | | | | 306.00 | 0.00 | 306.00 | |

| Engineering & Compliance Line Item Expenditure | | | | | | |
|---|---|-----------------------|---------------------------------|---------------------------------|--------------------------|------------------------|
| Major Object / Account # / Account Description | | FY 2012-13 Actuals | FY 2013-14 Adopted Budget | FY 2013-14 Amended Budget | FY 2013-14 Estimate * | FY 2014-15 Proposed |
| Salary & Employee Benefits | | | | | | |
| 51000-52000 | Salaries | \$ 26,637,986 | \$ 25,627,092 | \$ 25,627,092 | \$ 25,382,675 | \$ 26,267,107 |
| 53000-55000 | Employee Benefits | 11,862,850 | 12,380,094 | 12,380,094 | 11,976,984 | 12,995,189 |
| Sub-total Salary & Employee Benefits | | \$ 38,500,836 | \$ 38,007,185 | \$ 38,007,186 | \$ 37,359,659 | \$ 39,262,296 |
| Services & Supplies | | | | | | |
| 67250 | Insurance | \$ - | \$ - | \$ - | \$ - | \$ - |
| 67300 | Rents & Leases Equipment | - | - | - | - | - |
| 67350 | Rents & Leases Structure | 89,424 | 92,000 | 92,000 | 92,000 | 92,706 |
| 67400 | Household | - | - | - | - | - |
| 67450 | Professional & Special Services | 20,045 | 5,000 | 5,000 | 2,438 | 5,000 |
| 67460 | Temporary Agency Services | 11,164 | 60,000 | 60,000 | 52,696 | 50,000 |
| 67500 | Public Notice & Advertising | 34,603 | 65,000 | 65,000 | 63,244 | 65,000 |
| 67550 | Demurrage | - | 500 | 500 | - | 500 |
| 67600 | Maintenance of Equipment | 4,930 | 21,500 | 21,500 | 14,851 | 21,500 |
| 67650 | Building Maintenance | - | - | - | - | - |
| 67700 | Auto Mileage | 11,557 | 12,000 | 12,000 | 12,000 | 12,000 |
| 67750 | Auto Service | - | 1,000 | 1,000 | - | 1,000 |
| 67800 | Travel | 31,162 | 38,110 | 38,110 | 30,639 | 38,110 |
| 67850 | Utilities | - | - | - | - | - |
| 67900 | Communications | 140,044 | 138,590 | 138,590 | 174,001 | 136,590 |
| 67950 | Interest Expense | - | - | - | - | - |
| 68000 | Clothing | 11,033 | 16,320 | 16,320 | 11,033 | 13,320 |
| 68050 | Laboratory Supplies | 6,626 | 5,000 | 5,000 | 5,000 | 5,000 |
| 68060 | Postage | 30,348 | 40,000 | 40,000 | 33,797 | 40,000 |
| 68100 | Office Expense | 78,950 | 104,300 | 140,300 | 184,569 | 99,594 |
| 68200 | Office Furniture | 500 | 5,000 | 5,000 | 500 | 2,500 |
| 68250 | Subscriptions & Books | - | 800 | 800 | - | 800 |
| 68300 | Small Tools, Instruments, Equipment | 4,535 | 23,460 | 23,460 | 23,460 | 23,460 |
| 68350 | Film | - | - | - | - | - |
| 68400 | Gas and Oil | - | - | - | - | - |
| 69500 | Training/Conference/Tuition/ Board Exp. | 15,060 | 21,400 | 21,400 | 22,807 | 9,900 |
| 69550 | Memberships | - | 1,500 | 1,500 | - | 1,500 |
| 69600 | Taxes | - | - | - | - | - |
| 69650 | Awards | - | - | - | - | - |
| 69700 | Miscellaneous Expenses | 9,156 | 10,000 | 10,000 | 9,156 | 10,000 |
| 69750 | Prior Year Expense | - | - | - | - | - |
| 69800 | Uncollectable Accounts Receivable | - | - | - | - | - |
| 89100 | Principal Repayment | - | - | - | - | - |
| Sub-total Services & Supplies | | \$ 499,136 | \$ 661,480 | \$ 697,480 | \$ 732,192 | \$ 628,480 |
| 77000 | Capital Outlays | \$ - | \$ 50,000 | \$ 50,000 | \$ 50,000 | \$ 50,000 |
| 79050 | Building Remodeling | \$ - | \$ - | \$ - | \$ - | \$ - |
| Total Expenditures | | \$ 38,999,972 | \$ 38,718,665 | \$ 38,754,666 | \$ 38,141,851 | \$ 39,940,776 |

* Estimates based on July 2013 through March 2014 actual expenditures and budget amendments.

SCAQMD Quick Facts

- Created by the 1977 Lewis Air Quality Management Act; amended by 1988 Lewis-Presley Air Quality Management Act (also known as Health and Safety Code 40400).
 - Regional governmental agency (Special District)
- Jurisdiction for comprehensive air pollution control over all of Orange County, all of Los Angeles County except for the Antelope Valley, the non-desert portion of western San Bernardino County and the western and Coachella Valley portion of Riverside County
 - 10,743 Square Miles
 - Boundaries are Pacific Ocean to the west; San Gabriel, San Bernardino and San Jacinto Mountains to the north and east, and the San Diego County line to the south
 - Population of 16,444,162
 - Vehicle Registrations of 12,313,240
- Responsibilities include:
 - Monitoring air quality - 41 air monitoring stations
 - Planning, implementing, and enforcing programs to attain and maintain state and federal ambient air quality standards
 - Developing air quality rules and regulations that regulate stationary source emissions from such facilities as oil refineries, power plants, paint spray booths, incinerators, manufacturing plants, dry cleaners, and service stations
 - Establishing permitting requirements and issuing permits for stationary sources (27,535 operating locations with 74,292 permits)
- Decision-making body is a 13 member Governing Board
 - Total of 10 elected officials with four appointed by the Board of Supervisors from each of the four counties and six appointed by cities within the District
 - Three officials appointed by the Governor, the Speaker of the State Senate, and the Rules Committee of the State Senate

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Operating Indicators by Function
Last Nine Fiscal Years

| <u>Program Category</u> | <u>2005</u> | <u>2006</u> | <u>2007</u> | <u>2008</u> | <u>2009</u> | <u>2010</u> | <u>2011</u> | <u>2012</u> | <u>2013</u> |
|---|---------------|---------------|----------------|---------------|---------------|----------------|----------------|---------------|----------------|
| Advance Clean Air Technology | | | | | | | | | |
| Contracts awarded | 263 | 180 | 304 | 295 | 292 | 530 | 526 | 556 | 938 |
| Total Funding awarded | \$ 54,723,323 | \$ 79,893,504 | \$ 133,603,750 | \$ 91,309,725 | \$ 89,421,125 | \$ 180,669,515 | \$ 131,399,287 | \$ 82,536,619 | \$ 207,181,573 |
| Ensure Compliance with Clean Air Rules | | | | | | | | | |
| Inspections | 45,702 | 35,161 | 35,039 | 33,742 | 40,558 | 33,735 | 33,560 | 34,191 | 32,535 |
| Notices of Violations | 2,412 | 1,759 | 1,407 | 1,321 | 1,908 | 1,530 | 1,254 | 1,211 | 965 |
| Hearing Board Orders for Abatement | 81 | 61 | 49 | 30 | 36 | 35 | 47 | 93 | 51 |
| Hearing Board Appeals | 23 | 12 | 12 | 22 | 19 | 20 | 2 | 7 | 3 |
| Customer Service | | | | | | | | | |
| Public Information Requests | 5,477 | 4,956 | 4,651 | 3,528 | 4,962 | 3,821 | 3,410 | 3,543 | 3,460 |
| Community/Public Meetings attended | 92 | 118 | 182 | 145 | 198 | 202 | 190 | 274 | 294 |
| Small Business Assistance Contacts | 3,641 | 1,812 | 2,289 | 2,680 | 2,662 | 2,578 | 2,497 | 2,574 | 2,266 |
| Develop Programs to Achieve Clean Air | | | | | | | | | |
| Transportation Plans processed | 1,402 | 1,426 | 1,502 | 1,534 | 1,412 | 1,372 | 1,385 | 1,392 | 1,371 |
| Emission Inventory Updates | 359 | 229 | 284 | 439 | 586 | 703 | 521 | 530 | 408 |
| Develop Rules to Achieve Clean Air | | | | | | | | | |
| Rules Developed | 59 | 35 | 24 | 29 | 32 | 15 | 40 | 8 | 20 |
| Monitoring Air Quality | | | | | | | | | |
| Samples Analyzed by the Laboratory | 34,174 | 37,889 | 14,683 | 31,530 | 25,400 | 29,685 | 28,915 | 29,520 | 32,520 |
| Source Testing Analyses/Evaluations/Reviews | 706 | 598 | 830 | 794 | 718 | 740 | 1,030 | 952 | 1,035 |
| Timely Review of Permits | | | | | | | | | |
| Applications Processed | 11,459 | 9,747 | 9,481 | 9,599 | 11,564 | 9,627 | 13,044 | 12,225 | 14,153 |
| Applications Received-Small Business | - | - | - | - | 627 | 694 | 798 | 732 | 615 |
| Applications Received-All Others | 10,996 | 9,222 | 8,261 | 9,297 | 10,954 | 10,941 | 10,769 | 11,682 | 11,709 |
| Policy Support | | | | | | | | | |
| News releases | 34 | 48 | 44 | 51 | 76 | 69 | 64 | 57 | 61 |
| Media Calls | 1,400 | n/a | 643 | 684 | 334 | 313 | 252 | 520 | 1,131 |
| Media Inquiries Completed | n/a | 268 | 604 | 684 | 334 | 313 | 252 | 520 | 1,131 |

FINANCIAL POLICIES

SCAQMD is required to follow specific sections of the California Health & Safety Code, which guide SCAQMD's overall financial parameters. The Governing Board also provides financial direction to SCAQMD staff through the adoption of various financial-related policies. In addition, the Executive Officer's Administrative Policies and Procedures offer further financial guidance. Below is an overview of the guidelines and procedures for the applicable financial-related policies.

California Health & Safety Code (CA H&SC)

- District Budget Adoption – CA H&SC §40130

The District shall prepare, and make available to the public at least 30 days prior to public hearing, a summary of its budget and any supporting documents, including, but not limited to, a schedule of fees to be imposed by the district to fund its programs. The district shall notify each person who was subject to fees imposed by the district in the preceding year of the availability of information. The district shall notice and hold a public hearing for the exclusive purpose of reviewing the budget and of providing the public with the opportunity to comment upon the proposed district budget.

- Fees Assessed on Stationary Sources – CA H&SC §40500.1

Fees assessed on stationary sources shall not exceed, for any fiscal year, the actual costs of district programs for the immediately preceding fiscal year with an adjustment not greater than the change in the California Consumer Price Index (CPI), for the preceding calendar year, from January 1 of the prior year to January 1 of the current year. Unless specifically authorized by statute, the total amount of all of the fees collected from stationary sources of emissions in the 1995-96 fiscal year, and in each subsequent fiscal year, shall not exceed the level of expenditure in the 1993-94 fiscal year, except that the total fee amount may be adjusted annually by not more than the percentage increase in the California CPI. Any new state or federal mandate that is applicable to the SCAQMD on and after January 1, 1994 shall not be subject to this section.

- Limitation on Increase in Permit Fees – CA H&SC §40510.5

Existing permit fees shall not increase by a percentage greater than any percentage increase in the California CPI for the preceding calendar year, unless the board makes a finding, based upon relevant information in a rulemaking record, that the fee increase is necessary and will result in an apportionment of fees that is equitable. Any fee increase above CPI shall be phased in over a period of at least two years.

FINANCIAL POLICIES

SCAQMD Governing Board Policy

- Rule 320 - Automatic Fee Adjustment

Rule 320 provides that all Regulation III fees, with specified exceptions, are automatically adjusted July 1 of each year by the California Consumer Price Index for the preceding calendar year unless the Governing Board decides not to implement a fee adjustment, or to implement a different adjustment for a given year, either for all fees or for a specified fee or fees. The Executive Officer is directed to prepare annually a socioeconomic impact of the effect of the fee adjustment for review by stakeholders and the Governing Board and to hold a public hearing on the automatic fee adjustment to receive any public comments. Public comments and any responses, along with recommendations by the Budget Advisory Committee, are to be forwarded to the Governing Board by April 15 of each year.

- Unreserved Fund Balance Policy

The Unreserved Fund Balance Policy, adopted by the Board in June 2005, states that the Unreserved Fund Balance in the General Fund should be maintained at a minimum of 15 percent of revenues.

- Annual Investment Policy

The Annual Investment Policy sets forth the investment guidelines for all general, special revenue, trust, agency and enterprise funds of the South Coast Air Quality Management District (SCAQMD). The purpose of this policy is to ensure all of SCAQMD's funds are prudently invested to preserve principal and provide necessary liquidity, while earning a market average rate of return. The SCAQMD Annual Investment Policy conforms to the California Government Code as well as customary standards of prudent investment management.

The objectives of the policy, in priority order, are Safety of Principal, Liquidity, and Market Rate of Return. The policy establishes and defines investable funds, authorized instruments, credit quality requirements, maximum maturities and concentrations, collateral requirements, and qualifications of brokers, dealers, and financial institutions doing business with or on behalf of the SCAQMD.

The policy provides the Governing Board, the Treasurer, the Chief Financial Officer, and the Investment Oversight Committee with set duties and responsibilities to execute the policy.

FINANCIAL POLICIES

- Treasury Operations Contingency Plan and Procedures

The Treasury Operations Contingency Plan and Procedures states the course of action that may be implemented by the SCAQMD to protect the safety and liquidity of the SCAQMD funds and to protect SCAQMD from disruptions to ongoing operations if: 1) the financial stability of Los Angeles County may jeopardize SCAQMD funds invested through the Los Angeles County Treasurer; and/or 2) the Los Angeles County Treasurer, as Treasurer of SCAQMD, can no longer provide the treasury services currently provided in a satisfactory manner.

Under authority granted by Resolution 97-32, the Executive Officer, upon recommendation of the Chief Financial Officer and concurrence of the Administrative Committee, can appoint either the Chief Financial Officer or Controller as Acting Treasurer to immediately begin implementing the defined procedures to safeguard SCAQMD funds.

- Budget Advisory Committee

Established by the SCAQMD Governing Board, the Budget Advisory Committee serves in an advisory capacity to the SCAQMD on budgeting and financial planning matters. The committee, made up of members from the business and environmental community, provides additional insight during the annual budget process by reviewing and commenting on the proposed draft budget.

- Administrative Code

The Administrative Code of Rules and Procedures prescribes the responsibilities, conduct and specified reimbursements of SCAQMD employees and SCAQMD Board members. Sections include, but are not limited to mileage reimbursement, travel expenses, tuition reimbursement, professional licenses and memberships, and bilingual pay.

- Procurement Policy and Procedure

The Procurement Policy and Procedure provides the guidelines for the contracting and/or purchasing of services, material, equipment, supplies and fixed assets (i.e. capital outlays) by the SCAQMD under the direction of the Manager of the Procurement Section. These guidelines include, but are not limited to, purchasing methods, bidding procedures, signature authorization levels, fixed asset acquisition and disposition, and publication requirements for advertised procurements.

Procedures are in place to ensure that all businesses including minority business enterprises, women business enterprises, disabled veteran business enterprises and small

FINANCIAL POLICIES

businesses have a fair and equitable opportunity to compete for and participate in SCAQMD contracts and that SCAQMD utilizes, when necessary, the most highly qualified outside consultants/contractors to carry out the organization's responsibilities. SCAQMD Executive Officer, Deputy/Assistant Deputy Executive Officers, Legal Counsel, the Procurement Section, and staff all have responsibilities to execute the Procurement Policy and Procedure.

Executive Officer Administrative Policies and Procedures

- Travel

The Travel Policy provides guidance on allowable travel expenses, travel advances, and documentation requirements.

- Fixed Assets and Controlled Items

The Fixed Assets and Controlled Items policy provides guidance on the receipt, transfer, inventory, accountability, and disposal of fixed assets and controlled items.

- Purchasing of Non-Consultant Services and Supplies

The Purchasing of Non-Consultant Services and Supplies policy provides guidance in implementing the purchase of non-consultant services and supplies as addressed in Section IV of the SCAQMD Procurement Policy and Procedure document.

BUDGET GLOSSARY

| | |
|--------------------------------------|--|
| Adopted Budget | The annual budget for the General Fund that has been approved by SCAQMD's Governing Board. |
| Amended Budget | The adopted budget plus any modifications approved by SCAQMD's Governing Board during the fiscal year. |
| Appropriation | A specific amount of money authorized by SCAQMD's Governing Board which permits the SCAQMD to incur obligations and to make expenditures of resources. |
| Budget Advisory Committee | A committee made up of representatives from the business and environmental communities who review and provide feedback on SCAQMD's financial performance and proposed draft budget. |
| Budgetary Basis of Accounting | A form of accounting used in the budget where encumbered amounts are recognized as cash expenditures. |
| Balanced Budget | A budget in which planned expenditures do not exceed planned revenues. |
| Capital Asset | Tangible asset with an initial individual cost of \$5,000 or more and a useful life of at least three years or intangible assets with an individual cost of \$5,000 or more and a useful life of at least one year. |
| Capital Outlays | Expenditures for capital assets; A Major Object, or classification of expenditures, within SCAQMD's budget. |
| CPI-Based Fee Increase | Increases to fees (emission, annual operating, permit processing, hot spots, area sources, transportation, source test/analysis, and Hearing Board) based on the change in the Consumer Price Index for the preceding calendar year as reported for California Department of Finance—All Urban Consumer Series. This is in accordance with the California Health and Safety Code §40510.5. |
| Debt Service | The cost to cover the repayment of interest and principal on a debt for a particular period of time. |
| Debt Structure | The make-up of long-term debt. SCAQMD's long-term debt has been taken on to fund building and pension obligations. |
| Designation | Undesignated Fund Balance that has been set aside for specific purposes by actions of SCAQMD's Governing Board. |

BUDGET GLOSSARY

| | |
|--|--|
| Encumbrance | An amount of money committed for the payment of goods and services that have not yet been received or paid for. |
| Expenditures | Charges incurred for goods and services. |
| Fee Schedule | The State Legislature has authorized air districts to levy fees to support industry related programs which improve air quality. The schedule of fees levied by SCAQMD is approved by SCAQMD's Governing Board as part of the annual budget process. (Also see Regulation III.) |
| Fiscal Year | A period of 12 consecutive months selected to be the budget year. SCAQMD's fiscal year runs from July 1 to June 30. |
| FTE | Full Time Equivalent; A measure of the level of staffing. One FTE equates to 2,080 hours of paid time within a 12 month period. |
| Fund Balance | The accumulation of revenues less expenditures within a fund for a specific year. SCAQMD's fund balance is broken out into Reserves, Designations and Undesignated Fund Balance. In accordance with GASB-54, the fund balance is further defined as Committed, Nonspendable, and Assigned. |
| General Fund | The primary operating fund for SCAQMD where costs and revenues associated with the daily operations of SCAQMD are accounted for. |
| Grant | A sum of money given by an organization for a particular purpose. SCAQMD's grants which provide funding to the General Fund are primarily received from the Environmental Protection Agency (EPA), the Department of Homeland Security (DHS), and the Department of Energy (DOE). |
| Major Object | A term representing the classification of SCAQMD's annual budget into three categories: Salary and Employee Benefits, Services and Supplies, and Capital Outlays. |
| Mobile Source Revenues | Revenues received from motor vehicle registrations and from the administration of motor vehicle programs aimed at reducing air pollution from motor vehicles. |
| Pension Obligation Bonds (POBs) | A method of financing used by SCAQMD to refinance its obligations to its employees' pension fund. |

BUDGET GLOSSARY

| | |
|---------------------------------------|--|
| Proposed Draft Budget | The annual budget that has been drawn up by SCAQMD and made available to the public for review but not yet presented to its Governing Board for approval. |
| Regulation III | The rule that establishes the fee rates and schedules associated with permitting, annual renewals, emissions and other activities that help fund most of SCAQMD's regulatory programs and services. (Also see Fee Schedule.) |
| Reserves | Funding within the Fund Balance that is set aside for a specific future use and not available for any other purpose. |
| Revenue | Monies the SCAQMD receives as income. SCAQMD's revenue is mainly from fees charged to control or regulate emissions. |
| SBCERA | San Bernardino County Employment Retirement System manages the retirement plan for SCAQMD employees. |
| Salaries and Employee Benefits | Expenditures for Salary expenses and employee, retirement and insurance benefits. It is a Major Object, or classifications of expenditures, within SCAQMD's budget. |
| Services and Supplies | Expenditures for items and services needed for the daily operations of the SCAQMD including professional services, utilities, office expenses, maintenance, and debt service. It is a Major Object, or classifications of expenditures, within SCAQMD's budget. |
| Special Revenue Fund | A fund used to account for revenues and expenditures from specific sources earmarked for specific purposes. SCAQMD's main operating fund is its General Fund; All other funds are designated as Special Revenue Funds. The SCAQMD does not budget in Special Revenue Funds. |
| State Subvention | Assistance provided by the state for a specific purpose. The state of California provides assistance to air districts in recognition that they perform mandated functions such as compliance assistance, planning, and rule development that should be covered by state funding sources. |
| Stationary Source Fees | Revenues collected from emission fees, permit fees, and annual operating fees to support projects for improving air quality. |
| Transfer In/Out | A transfer of funds between different funds within SCAQMD. A transfer of cash from the General Fund to a Special Revenue Fund would be a Transfer Out for the General Fund and a Transfer In for the Special Revenue Fund. |

BUDGET GLOSSARY

Undesignated Fund Balance Funding within the Fund Balance that is not designated for a specific purpose and can only be used upon approval of SCAQMD's Governing Board.

Work Programs Activities carried out by SCAQMD staff. Work Programs are classified into nine Work Program Categories according to the nature of the activity being performed.

Air Quality Historical Timeline



Photo courtesy of Los Angeles Times Collection, Department of Special Collections, UCLA Library

First recognized episodes of smog occur in Los Angeles in the summer of 1943.

1943

1950

Orange County APCD established.



1966



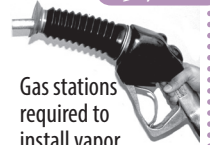
California adopts first automobile tailpipe emission standards in the nation.

1970

Federal Clean Air Act is enacted, establishing the basic U.S. program for controlling air pollution.



1978



Gas stations required to install vapor recovery "boots" on gas nozzles.

1947

Los Angeles County Air Pollution Control District (APCD) established—the first of its kind in the nation.



1957

San Bernardino and Riverside County APCDs formed.



California Air Resources Board (CARB) holds its first meeting with Dr. Arie J. Haagen-Smit as its first chairman.

U.S. EPA, created in 1970, adopts first national air quality standards.

1971

SCAQMD formed through merger of Los Angeles, Orange, Riverside and San Bernardino APCDs.



1968

1977

1984



California's Smog Check program takes effect.

1989

SCAQMD adopts first Air Quality Management Plan to show attainment of clean air standards.



California Global Warming Solutions Act of 2006 (AB 32) enacted to establish first ever comprehensive program to reduce greenhouse gases.

2006

SCAQMD adopts the nation's first phase-out of the toxic chemical perchloroethylene (or "perc") used at dry cleaners.

2002



2014-2027

Projected achievement of current air quality health standards in South Coast air basin.



2008

SCAQMD adopts Climate Change Policy.

1990

Federal Clean Air Act Amendments of 1990 enacted. Established new programs aimed at curbing urban ozone, toxic emissions, and vehicle emissions.

The Carl Moyer Program established to reduce mobile source emissions.

1998

1993

RECLAIM (REgional Clean Air Incentives Market) emissions trading program adopted.



2003

SCAQMD Mow Down Air Pollution Electric Lawnmower Exchange Program begins.



2011

Federal agencies and the State of California establish single timeframe for corporate average fuel economy (CAFE) and greenhouse gas standards for the next generation of cars and light-duty trucks.



SCAQMD establishes ridesharing requirements for region's employers.

1987



**South Coast
Air Quality Management District**

21865 Copley Drive
Diamond Bar, CA 91765-4178

www.aqmd.gov



South Coast
AQMD

South Coast Air Quality Management District

Technology Advancement Office



Clean Fuels Program 2013 Annual Report and 2014 Plan Update

March 2014

South Coast Air Quality Management District

Governing Board

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William A. Burke, Ed.D.
Assembly Speaker Appointee

County Representatives

Michael D. Antonovich
Supervisor, Los Angeles County

Shawn Nelson
Supervisor, Orange County

Josie Gonzales
Supervisor, San Bernardino County

John J. Benoit**
Supervisor, Riverside County

State Representatives

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Miguel A. Pulido*
Mayor, City of Santa Ana
Orange County Cities

Ben Benoit
Mayor Pro Tem, City of Wildomar
Riverside County Cities

Executive Officer

Barry R. Wallerstein, D.Env.

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**Technology Committee Chairman

*South Coast Air Quality Management District
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EXECUTIVE SUMMARY

The South Coast Air Quality Management District (SCAQMD) is the air pollution control agency for all of Orange County and the urban portions of Los Angeles, Riverside and San Bernardino counties. This region, which encompasses all of the South Coast Air Basin plus small portions of the Mojave Desert and Salton Sea Air Basins, historically experiences the worst air quality in the nation due to the natural geographic and atmospheric conditions of the region coupled with the high population density and associated mobile and stationary source emissions. Recognizing this challenge, in 1988 the state established the SCAQMD's Clean Fuels Program (along with establishment of the Technology Advancement Office), which affords the SCAQMD the ability to fund the development, demonstration and accelerated deployment of clean technologies. For over 20 years, using funding received through a \$1 motor vehicle registration fee, the Clean Fuels Program has encouraged, fostered and supported technologies such as hydrogen and fuel cells, natural gas engines and infrastructure, battery electric vehicles, plug-in hybrid electric vehicles and related fueling infrastructure. The SCAQMD continues to support a wide variety of technologies, in different stages of maturity, to provide a continuum of emission reductions and health benefits over time.

The Clean Fuels Program is implemented as a public-private partnership in conjunction with private industry, technology developers, academic institutions, research institutions and government agencies.

The overall strategy of the SCAQMD's Clean Fuels Program is based in large part on technology needs identified through the Air Quality Management Plan (AQMP) process and the SCAQMD Board's directives to protect the health of residents in Southern California, which encompasses approximately 16.8 million people (nearly half the population of California). The AQMP is the long-term "blueprint" that defines:

- the basin-wide emission reductions needed to achieve federal ambient air quality standards;
- the regulatory measures to achieve those reductions;
- the timeframes to implement these proposed measures; and
- the technologies required to meet these future proposed regulations.

The 2012 AQMP identifies the need for 200 tons/day oxides of nitrogen (NO_x) reductions to be adopted by 2020 for full implementation by 2023 and in large part focuses control measures on transportation technologies and cleaner fuels. Moreover, the SCAQMD is currently only one of two regions in the nation recognized as an extreme ozone nonattainment area (the other is San Joaquin Valley). This is especially noteworthy because the largest contributor to ozone is NO_x emissions, and mobile sources (on- and off-road as well as aircraft and ships) contribute to more than three-fourths of the NO_x emissions in this region. These emission reduction needs are further identified in a joint SCAQMD, California Air Resources Board (CARB) and San Joaquin Air Pollution Control District effort, "Vision for Clean Air: A Framework for Air Quality and Climate Control Planning."¹ The overwhelming hurdles to reduce ozone and NO_x will require the Clean Fuels Program to encourage and accelerate advancement of transformative transportation technologies and commercialization of progressively lower-emitting vehicles and fuels. The Program must also remain flexible to address the needs which will be identified during the current planning process for the 2016 AQMP which will focus on addressing ozone standards. Furthermore, volatile organic compounds (VOCs) and fine particulate matter (PM_{2.5}) produced from mobile sources must also be addressed. The NO_x and VOC emission sources of greatest concern to this region are heavy-duty on-road and off-road vehicles as well as to a lesser extent light- and medium-duty on-road vehicles. And while it is anticipated that the

¹ http://www.arb.ca.gov/planning/vision/docs/vision_for_clean_air_public_review_draft.pdf

2014 standard for PM_{2.5} will be attained for this region, it is contingent upon compliance and implementation of existing and proposed rules and regulations.

In recent years, it has become increasingly clear that the effect of containers through the Ports of Los Angeles and Long Beach and the subsequent movement of goods throughout the region not only have a dramatic impact on air quality but also the quality of life to the communities along the major goods movement corridors. In recognition of these impacts, the SCAQMD has initiated a concerted effort in the last couple of years to actively develop and demonstrate zero and near-zero emissions goods movement technologies, such as electric trucks, plug-in hybrid trucks with all-electric range, zero emission container transport technologies, trucks operating from wayside power including catenary technology and heavy-duty technologies.

The prioritization of these types of projects as well as potential technologies which assist with their further development and deployment are emphasized in the 2014 Plan Update portion of the report. The 2013 Annual Report highlights the projects contracted during the previous calendar year and reflects the current status of the program.

2013 Annual Report

During Calendar Year (CY) 2013 the SCAQMD executed 45 new contracts, projects or studies and modified 3 continuing projects adding additional dollars toward research, development, demonstration and deployment (RDD&D) of alternative fuel and clean fuel technologies. Table 2 (page 24) lists these 48 projects or studies, which are further described in this report. The SCAQMD Clean Fuels Program contributed approximately \$7.5 million in partnership with other governmental organizations, private industry, academia and research institutes, and interested parties, with total project costs of nearly \$23.3 million. Table 3 (page 26) provides information on outside funding received into the Clean Fuels Fund (approximately \$2 million in 2013) as cost-share for the contracts executed in CY 2013. Table 4 (page 26) provides a comprehensive summary of federal and state revenue awarded to the SCAQMD during CY 2013 (\$15.8 million) for projects to be included within the Clean Fuels Program or which align well with and are complementary to the Clean Fuels Program. Table 5 (page 27) provides a comprehensive summary of federal and state revenue awarded to SCAQMD during CYs 2009 through 2012 (nearly \$111 million); some of these projects were undertaken as part of the Clean Fuels Program, while some of the revenue was recognized into other special funds but similar to those reflected in Table 4 align well and are complementary to the Clean Fuels Program.

The projects or studies executed in 2013 addressed a wide range of issues and opportunities with a diverse mix of advanced technologies. The following core areas of technology advancement include:

- Electric and Hybrid Vehicle Technologies and Related Infrastructure (emphasizing electric and hybrid electric trucks and zero emission container transport technologies)
- Hydrogen and Mobile Fuel Cell Technologies and Infrastructure
- Engine Systems (particularly heavy-duty natural gas engines for truck and rail applications)
- Fueling Infrastructure and Deployment (predominantly compressed and liquid natural gas)
- Fuels and Emission Studies
- Health Impacts Studies
- Stationary Clean Fuels Technology (including renewables)
- Emission Control Technologies
- Outreach and Technology Transfer

During CY 2013, the SCAQMD supported a variety of projects and technologies, ranging from near-term to long-term research, development, demonstration and deployment activities. This “technology portfolio” strategy provides the SCAQMD the ability and flexibility to leverage state and federal

funding while also addressing the specific needs of the South Coast Air Basin (Basin). Projects in CY 2013 included continued development and demonstration of electric and hybrid technologies with an emphasis on zero emission goods movement technologies, development and demonstration of heavy-duty natural gas engines and vehicles and development and demonstration of hydrogen technologies and infrastructure.

As of January 1, 2014, there were 124 open contracts in the Clean Fuels Program; these are summarized in Appendix B.

Twenty four research, development, demonstration and deployment projects or studies and 13 technology assessment and transfer contracts were completed in 2013, as listed in Table 6 (page 51). Appendix C comprises two-page summaries of the technical projects completed in 2013. In accordance with California Health and Safety Code Section 40448.5.1(d), this report must be submitted to the state legislature by March 31, 2014, after approval by the SCAQMD Governing Board.

2014 Plan Update

Every year TAO staff re-evaluates the Clean Fuels Program (Program) to craft a Plan Update which essentially serves to re-calibrate the compass. The Program continually seeks to support the deployment of lower-emitting technologies. The design and implementation of the Program Plan must balance the needs in the various technology sectors with technology readiness, emissions reduction potential and co-funding opportunity. The SCAQMD Program is significant, especially during these economically tough times when both public and private funding available for technology research and development are limited. However, since national and international activities affect the direction of technology trends, the real challenge for the SCAQMD is to identify project or technology opportunities in which its available funding can make a significant difference in deploying progressively cleaner technologies in the Basin. The SCAQMD employs a number of outreach and networking activities to overcome this challenge, ranging from intimate involvement with state and federal collaboratives, partnerships and industrial coalitions to issuing Program Opportunity Notices to essentially throw out a wide net to solicit project ideas and concepts and Requests for Information to determine the state of various technologies and what is needed to advance those technologies.

As mentioned, the overall strategy is based in large part on technology needs identified in the SCAQMD's AQMP and the SCAQMD Governing Board's directives to protect the health of residents in the Basin. The NO_x, volatile organic compounds (VOC) and PM emission sources of greatest concern are heavy-duty on-road vehicles, light-duty on-road vehicles and off-road equipment.

The Plan Update includes projects to develop, demonstrate and commercialize a variety of technologies, from near term to long term, that are intended to provide solutions to the emission control needs identified in the 2012 AQMP. While modest NO_x and PM_{2.5} reductions will be necessary to meet the federal PM_{2.5} standards by 2014, significant NO_x and PM_{2.5} reductions will be necessary to meet the federal 8-hour ozone standard of 80 ppb by 2023 and 75 ppb by 2032; the 1-hour ozone standard of 0.125 ppm by 2022, which must be met as a result of a 2012 court case even though EPA had previously revoked this standard; and the newly revised federal annual PM_{2.5} standard of 12 µg/m³. Given the need for these significant reductions over the next 10-20 year timeframe, mid- and longer-term alternative fuels, hybrid, electric and fuel cell based technologies are emphasized. Several of the technology areas of focus include:

- reducing emissions from port-related activities, such as cargo handling equipment and container movement technologies, including demonstration and deployment of zero emission cargo container movement systems;

- mitigating criteria pollutant increases from renewable fuels, such as low-blend ethanol and high-blend biodiesel;
- increased activities in electric, hybrid, battery and plug-in hybrid technologies across light-, medium- and heavy-duty platforms; and
- production of transportation fuels and energy from renewable biowaste sources.

Table 7 lists the potential projects across the core technologies identified in this report. Potential projects for 2014 total more than \$16.4 million, with anticipated leveraging of nearly \$76 million. The proposed projects may also be funded by revenue sources other than the Clean Fuels Program, especially VOC and incentive projects.

CLEAN FUELS PROGRAM 2013 ANNUAL REPORT

Program Background

The Basin, which comprises the Los Angeles, Orange, San Bernardino and Riverside Counties, has the worst air quality in the nation due to a combination of factors, including high vehicle population, high vehicle miles traveled within the Basin and geographic and atmospheric conditions favorable for photochemical oxidant (smog) formation. Due to these challenges, the state legislature enabled the SCAQMD to implement the Clean Fuels Program to accelerate the implementation and commercialization of clean fuels and advanced technologies in the Basin. In 1999, state legislation was passed which amended and extended the Clean Fuels Program. Specifically, as stated in the California Health and Safety Code (H&SC) section 40448.5.1(d), the SCAQMD must submit, on or before March 31 of each year, to the Legislature an annual report that includes:

1. A description of the core technologies that the SCAQMD considers critical to ensure attainment and maintenance of ambient air quality standards and a description of the efforts made to overcome barriers to commercialization of those technologies;
2. An analysis of the impact of the SCAQMD's Clean Fuels Program on the private sector and on research, development and commercialization efforts by major automotive and energy firms, as determined by the SCAQMD;
3. A description of projects funded by the SCAQMD, including a list of recipients, subcontractors, co-funding sources, matching state or federal funds and expected and actual results of each project advancing and implementing clean fuels technology and improving public health;
4. The title and purpose of all projects undertaken pursuant to the Clean Fuels Program, the names of the contractors and subcontractors involved in each project and the amount of money expended for each project;
5. A summary of the progress made toward the goals of the Clean Fuels Program; and
6. Funding priorities identified for the next year and relevant audit information for previous, current and future years covered by the project.

2013 Overview

This report summarizes the progress of the SCAQMD Clean Fuels Program for CY 2013. This SCAQMD program co-sponsors projects to develop and demonstrate zero, near-zero and low emission clean fuels and advanced technologies and to promote commercialization and deployment of promising or proven technologies in Southern California. These projects are conducted through public-private partnerships with industry, technology developers, academic and research institutes and local, state and federal agencies.

During the period between January 1 and December 31, 2013, the SCAQMD executed 45 new contracts, projects or studies and modified 3 continuing projects adding additional dollars during CY 2013 that support clean fuels and advanced zero, near-zero and low emission technologies. The SCAQMD Clean Fuels Program contribution for these projects was approximately \$7.5 million, with total project costs of more than \$23 million. These projects address a wide range of issues with a diverse technology mix. This report highlights achievements and summarizes project costs of the SCAQMD Clean Fuels Program in this period. The report also provides information on outside funding received into the Clean Fuels Fund (approximately \$2 million) as

cost-share for contracts executed in this period as well as funds awarded to the SCAQMD for projects to be included in the Clean Fuels Program or which align well and are complementary to the Clean Fuels Program (\$15.8 million in 2013). A comprehensive summary update on the nearly \$111 million in federal and state funding awarded to the SCAQMD between 2009 and 2012, again for projects that were included as part of the Clean Fuels Program or which align well and are complementary with the Clean Fuels Program, is also provided. The SCAQMD will continue to pursue federal and state funding opportunities in 2014 to amplify leverage.

The Need for Advanced Technologies & Clean Fuels

Achieving federal and state clean air standards in Southern California will require emission reductions from both mobile and stationary sources beyond those expected using current technologies. The need for advanced technologies and clean fuels is best illustrated by Figure 1 below, which identifies NO_x emissions by category and identifies just how far those emissions must be reduced to meet federal standards by 2023 and 2032.

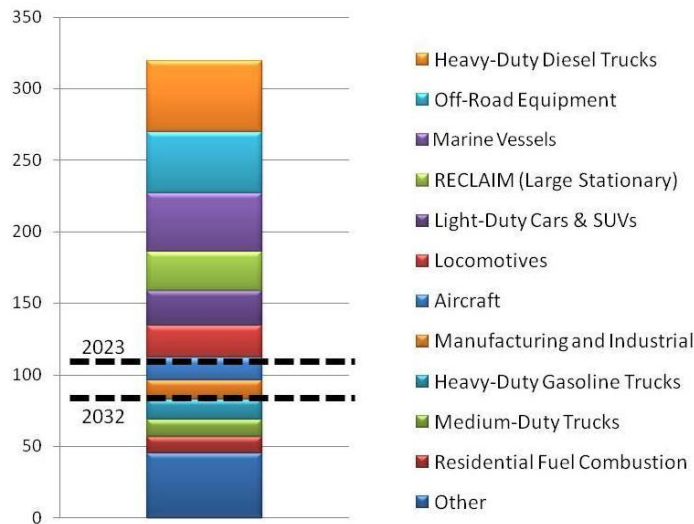


Figure 1: 2013 NO_x Emissions by Category

Additionally, the following piechart reflects NO_x contributors by sector, sharply illustrating the impact of mobile sources on air quality and why the 2012 AQMP calls for the reduction of 200 tons/day of NO_x by 2020 as well as why this region is recognized as an extreme ozone nonattainment area.

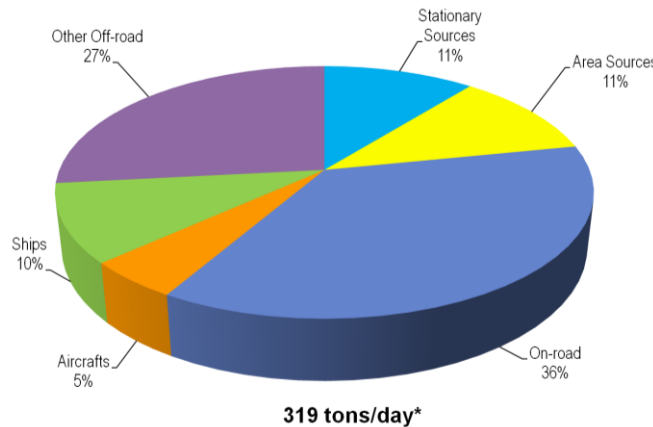


Figure 2: NO_x Contributors by Sector

To fulfill long-term emission reduction targets, the 2012 AQMP relies on a mix of currently available technology as well as the expedited development and demonstration of advanced technologies that are not yet ready for commercial use. Significant reductions are anticipated from implementation of advanced control technologies for both on-road and off-road mobile sources. In addition, the air quality standards for ozone (0.08 ppm, 8-hour average) and fine particulate matter, promulgated by the U.S. Environmental Protection Agency (U.S. EPA) in 1997 and 2006, are projected to require additional long-term control measures for both NO_x and VOC. The 2012 AQMP's estimate of needed NO_x reductions will require the SCAQMD Clean Fuels Program to encourage and accelerate advancement of cleaner, transformative transportation technologies that can be used as control strategies in the AQMP.

Recent health studies also indicate a greater need to reduce NO_x emissions and toxic air contaminant emissions. More importantly, the CARB listed diesel exhaust emissions as a toxic air contaminant in 1998. Subsequently, in 1999, the SCAQMD completed the Multiple Air Toxics Exposure Study (MATES-II) and found that diesel combustion sources (primarily from heavy-duty vehicles) contribute approximately 70 percent to the estimated potential cancer risk from air toxics in the Basin. A follow-on study, MATES-III, in which air quality sampling was initiated in spring 2004 and ended in 2006, was undertaken to evaluate air toxic exposure trends, expand the list of known air toxics and assess local impacts from industrial, commercial and mobile sources. The results have shown a decrease in stationary emitted air toxics and gasoline related air toxics, but continued high levels of emissions from diesel engine sources. The MATES-III report was finalized in spring 2008. Although results showed an overall decrease in toxics exposures throughout the basin, there were localized areas that had increased risk, most notably around the Ports of Los Angeles and Long Beach. This increased risk is likely a result of uncontrolled diesel emissions from goods movement activities, specifically emissions from trucks and cargo handling equipment, locomotives and marine vessels. A MATES IV study was launched in 2012, and while the goal of MATES IV, like the prior studies, will be to assess air toxic levels, update risk characterization, and determine gradients from selected sources, MATES IV has an added ultrafine PM and black carbon monitoring component as well. It is anticipated that a draft report on the findings will be available by mid-2014.

Greenhouse gas (GHG) emissions and petroleum dependency arising from the heavy use of conventional technologies continue to be a concern and focal point for state and federal government as well as the general public. In response to these concerns, the federal government has launched several programs (the Hydrogen, Fuel Cells and Infrastructure Technologies Program and the FreedomCAR and Vehicle Technologies Program) to investigate and develop increased efficiency and alternative fuel (including hydrogen) technologies. Independently, the State has adopted goals to reduce long-term dependence on petroleum-based fuels (AB 2076) and the transition to alternative fuels based on life-cycle analyses (AB 1007).

The Global Warming Solutions Act of 2006 (AB 32) requires California's greenhouse gas emissions to be capped at 1990 levels by 2020. The 2007 Low-Carbon Fuel Standard (LCFS) for transportation fuels will necessitate increased research into alternatives to oil and traditional fuels. And in September 2008, SB 375 was adopted requiring CARB to set regional targets reducing GHG's from cars and light trucks by 2020 and 2035 and directs regional planning agencies to develop land-use strategies to meet the targets. In 2012 California Governor Brown also set a California target for reductions of GHG emissions from the transportation sector of 80 percent less than 1990 levels by 2050 and called for establishment of benchmarks for the penetration of zero emission vehicles and infrastructure for 2015, 2020 and 2025. Governor Brown's FY 2013-14 state budget also consolidates programs funding bicycle, pedestrian and mitigation projects to fund high-priority projects that reduce GHGs consistent with SB 375 objectives. The budget also

identifies areas for AB 32 cap-and-trade proceeds including reducing transportation emissions and energy efficiency projects for the electricity and commercial/residential energy sector.

To achieve the goals established by these landmark efforts, in 2012 CARB adopted a LEV III program for Model Year (MY) 2015 to 2025 light- and medium-duty vehicles, amended the Zero Emission Vehicle Regulation and amended the Clean Fuels Outlet requirements. These tighter standards for passenger cars and light- and medium-duty trucks will require reduced tailpipe emissions and nearly no evaporative emissions. CARB also proposed new requirements for zeroemission vehicles lowering the threshold requirement, which means automakers must begin producing zero emission vehicles by 2016. To achieve the Governor's Executive Order, CARB envisions that 80 percent of vehicles must be all electric, battery electric, hydrogen and/or fuel cell by 2050. In late 2011 CARB also adopted amendments to low-sulfur marine fuel requirements to extend the nautical zone and loosened cargo handling equipment and transportation refrigeration regulations because sufficient retrofit technologies aren't available in the marketplace. In 2011 the Federal government adopted fuel economy and GHG emissions standards for medium- and heavy-duty vehicles for MYs 2014-2018 and propose to move forward with Tier 3 levels for light- and medium-duty trucks and tighter criteria pollutant standards for passenger vehicles.

In summary, advanced, energy efficient and renewable technologies are needed not only for attainment, but also to protect the health of those who reside within the SCAQMD's jurisdiction; to reduce long-term dependence on petroleum-based fuels; and to support a more sustainable energy future. Conventional strategies and traditional supply and consumption need to be retooled in order to achieve the federal air quality goals. To help meet this need for advanced, clean technologies, the SCAQMD Governing Board continues to aggressively carry out the Clean Fuels Program and promote alternative fuels through its Technology Advancement Office (TAO).

This Program is intended to assist in the rapid development and deployment of progressively lower-emitting technologies and fuels through innovative public-private partnership. Since its inception, SCAQMD's TAO has co-funded projects in cooperative partnerships with private industry, technology developers, academic and research institutions and local, state and federal agencies. The following sections describe funding, core technologies and advisory oversight of the Clean Fuels Program.

Program Funding

The Clean Fuels Program is established under California H&SC Sections 40448.5 and 40512 and Vehicle Code Section 9250.11. This legislation establishes mechanisms to collect revenues from mobile and stationary sources to support the program objectives and identifies the constraints on the use of funds. In 2008, these funding mechanisms were reauthorized under SB 1646 (Padilla), which removed the funding sunset of January 1, 2010, and established the five percent administrative cap instead of the previous cap of two-and-half percent.

The Program is funded through a \$1 fee on motor vehicles registered in the SCAQMD. Revenues collected from these motor vehicles must be used to support mobile source projects. Stationary source projects are funded by an emission fee surcharge on stationary sources emitting more than 250 tons of pollutants per year within the SCAQMD. For CY 2013 the funds available through each of these mechanisms were as follows:

- Mobile sources (DMV revenues) \$12,433,490
- Stationary sources (emission fee surcharge) \$275,708

The SCAQMD Clean Fuels Program also receives grants and cost-sharing revenue contracts from various agencies, on a project-specific basis, that supplement the SCAQMD program. Historically, such cooperative project funding revenues have been received from CARB, the CEC, the U.S. EPA, the U.S. Department of Energy (DOE) and the U.S. Department of Transportation (DOT). These supplemental revenues depend in large part on the originating agency, its budgetary and planning cycle and the specific project or intended use of the revenues. Table 3 (page 26) lists supplemental grants and revenues totaling more than \$2 million for contracts executed in CY 2013. Table 4 (page 26) lists federal and state revenue totaling more than \$15.8 million awarded to the SCAQMD in 2013 for projects that will be part of the Clean Fuels Program or align well and complement the Clean Fuels Program.

The final and perhaps most significant funding source can best be described as an indirect source, i.e., funding not directly received by the SCAQMD. This indirect source is the cost-sharing provided by private industry and other public and private organizations. Historically, the Technology Advancement Office has been successful in leveraging its available public funds with \$3 to \$4 of outside funding for each \$1 of SCAQMD funding. For 2013, excluding ARRA and other one-time federal opportunities, one-time settlement funds and incentive funding, the Clean Fuels Program leveraged each \$1 to slightly more than \$3 of outside funding. Through these public-private partnership, the SCAQMD has shared the investment risk of developing new technologies along with the benefits of expedited development and commercial availability, increased end-user acceptance, reduced emissions from the demonstration projects and ultimately increased use of clean technologies in the Basin. The SCAQMD's Clean Fuels Program has also avoided duplicative efforts by coordinating and jointly funding projects with major funding agencies and organizations. The major funding partners for 2013 are listed in Table 1 (page 14).

Core Technologies

Given the diversity of sources that contribute to the air quality problems in the Basin, there is no single technology or "Silver Bullet" that can solve all of the problems. A number of technologies are required and these technologies represent a wide range of applications, with full emissions benefit "payoffs," i.e., full commercialization and mass deployment occurring at different times. The broad technology areas of focus – the "Core Technologies" – for the Clean Fuels Program are as follows:

- Electric and Hybrid Vehicle Technologies and Infrastructure (emphasizing electric and hybrid electric trucks and zero emission container transport technologies)
- Hydrogen and Fuel Cell Technologies and Infrastructure
- Infrastructure and Deployment (predominantly compressed and liquid natural gas)
- Engine Systems (particularly heavy-duty natural gas engines for truck and rail applications)
- Emission Control Technologies
- Fuels/Emissions Studies
- Health Impacts
- Stationary Clean Fuels Technologies

The SCAQMD continually seeks to support the deployment of lower-emitting technologies. The Clean Fuels Program is shaped by two basic factors:

1. Low and zero emission technologies needed to achieve clean air standards in the Basin; and

2. Available funding to support technology development within the constraints imposed by that funding.

The SCAQMD strives to maintain a flexible program to address dynamically evolving technologies and the latest progress in the state of the technology. Although the SCAQMD program is significant, especially at a time when both public and private funding available for technology research and development are limited, national and international activities affect the direction of technology trends. As a result, the SCAQMD program must be flexible in order to leverage and accommodate these changes in state, national and international priorities. This is especially true given the current economic climate which while in the beginnings of recovery remains sluggish. The ultimate challenge for the SCAQMD is to identify project or technology opportunities in which its available funding can make a difference in achieving progressively cleaner air in the Basin. While employing a number of creative outreach and networking activities to try to overcome these challenges, SCAQMD's Technology Advancement Office annually develops a comprehensive plan to encourage and accelerate the development and demonstration of cleaner technologies. This comprehensive plan (referred to as the 2014 Plan Update within this document) essentially re-calibrates the Clean Fuels Program for the upcoming year.

Historically, mobile source projects have targeted low emission developments in automobiles, transit buses, medium- and heavy-duty trucks and non-road applications. These vehicle-related efforts have focused on advancements in engine design, electric power-trains and energy storage/conversion devices (e.g., fuel cells and batteries); and implementation of clean fuels (e.g., natural gas, propane and hydrogen) including their infrastructure development. Stationary source projects have included a wide array of advanced low NO_x technologies and clean energy alternatives such as fuel cells, solar power and other renewable energy systems.

Specific projects are selected for co-funding from competitive solicitations, cooperative agency agreements and unsolicited proposals. Criteria considered in project selection include emissions reduction potential, technological innovation, potential to reduce costs and improve cost effectiveness, contractor experience and capabilities, overall environmental impact or benefit, commercialization and business development potential, cost sharing and consistency with program goals and funding constraints. The core technologies for the SCAQMD programs that meet both the funding constraints as well as 2012 AQMP needs for achieving clean air are briefly described below.

Electric and Hybrid Vehicle Technologies and Infrastructure

There has been an increased level of activity and attention on electric and hybrid vehicles due to a confluence of factors, including the highly successful commercial introductions of hybrid passenger vehicles and more recently electric vehicles by almost all of the automakers, volatility in oil prices and increased public attention on global warming. In January 2012, CARB adopted the California Zero Emission Vehicle (ZEV) III requirements and amended the ZEV and Clean Fuels Outlet (CFO) regulations. There are alternative strategies allowed to comply with the ZEV regulation, including producing battery electric vehicles, plug-in hybrid electric vehicles (PHEVs), and hydrogen-fueled internal combustion engine (ICE) vehicles.

As a result, there is now a window of opportunity to leverage state and federal activities in the development and deployment of technologies that can accelerate advanced electric and hybrid technologies, including PHEV, medium- and heavy-duty hybrid vehicle deployment, energy storage technologies, development of medium- and heavy-duty hybrid emission certification cycles, battery durability testing and establishment of driver use patterns. Such technology

developments, if successful, are considered *enabling* because they can be applied to a variety of fuels (e.g., gasoline, natural gas, ethanol and hydrogen) and propulsion systems (e.g., ICEs and fuel cells). Electric and hybrid technologies are also being explored to address one of the SCAQMD's 2013 and 2014 priorities, which is to continue demonstration and deployment of zero emission cargo container movement technologies.

Infrastructure and Deployment

A key element for the widespread acceptance and resulting increased use of alternative fueled vehicles is the availability of the supporting refueling infrastructure. The refueling infrastructure for gasoline and diesel fuel is well established and accepted by the driving public. Alternative, clean fuels such as alcohol-based fuels, propane, hydrogen, hydrogen-natural gas mixtures and even electricity are much less available or accessible, whereas natural gas has recently become more readily available in light of fracking technologies being employed to access the abundant shale gas deposits throughout North America. Nonetheless, to realize emissions reduction benefits, alternative fuel infrastructure must be developed in tandem with the growth in alternative fueled vehicles. The objectives of the SCAQMD are to expand the infrastructure to support zero and near-zero emission vehicles through the development, demonstration and installation of alternative fuel vehicle refueling technologies. However, this category is predominantly targeted at compressed and liquid natural gas infrastructure and deployment, with the related infrastructure for electric and hybrid and hydrogen and fuel cell included within their technology category.

Hydrogen and Fuel Cell Technologies and Infrastructure

Most of the automobile manufacturers have conceded that mass commercial introduction of fuel cell vehicles (FCVs) are likely to be delayed due to the cost, durability and infrastructure issues associated with hydrogen fueling. A survey of the major automakers conducted by the California Fuel Cell Partnership (CaFCP) estimates that there will be approximately 53,000 fuel cell vehicles by 2017, if sufficient hydrogen infrastructure is available. The SCAQMD continues to support the infrastructure required to refuel these demonstration fuel cell vehicles, but is also actively engaged in finding alternatives to the costly and potential longer term fuel cell power plant technology. As mentioned previously, plug-in hybrid technology could help enable fuel cells by reducing the capacity, complexity and cost of the fuel cell vehicle system. Further bridging technologies being investigated are hybrid or plug-in hybrid hydrogen ICE vehicles and hydrogen-CNG blended ICE vehicles.

Emission Control Technologies

This broad category refers to technologies that could be deployed on existing mobile sources, aircraft, locomotives, marine vessels, farm and construction equipment, cargo handling equipment, industrial equipment, and utility and lawn-and-garden equipment. The in-use fleet comprises the majority of emissions, especially the older vehicles and non-road sources, which are typically uncontrolled and unregulated, or controlled to a much lesser extent than on-road vehicles. The authority to develop and implement regulations for retrofit on-road and non-road mobile sources lies primarily with the U.S. EPA and CARB and to a lesser extent with the SCAQMD.

Low emission and clean-fuel technologies that appear promising for on-road mobile sources should be effective at reducing emissions from a number of non-road sources. For example, immediate benefits are possible from particulate traps, selective catalytic reduction (SCR) and

emulsified fuels that have been developed from diesel applications. Clean fuels such as natural gas, propane, hydrogen and hydrogen-natural gas mixtures may also provide an effective option to reduce emissions from some non-road applications. Reformulated gasoline, ethanol and alternative diesel fuels, such as biodiesel and gas-to-liquid (GTL), also show promise when used in conjunction with advanced emissions controls and new engine technologies. The CARB, U.S. EPA and the SCAQMD have also promulgated regulations that lower the sulfur content of diesel fuels, which provides a direct fuel related PM reduction and improves the efficiency of particulate reduction aftertreatment devices.

Engine Systems

Medium- and heavy-duty on-road vehicles contributed approximately 36 percent of the Basin's NO_x based on 2007 AQMP data. More importantly, on-road heavy-duty diesel engines contributed almost 60 percent of the on-road mobile source PM_{2.5}, which has known toxic effects. These figures notably do not include the significant contribution from off-road mobile sources. In fact, CARB's off-road 2006 emission model estimates that diesel-powered off-road construction equipment alone emits 120 tons per day of NO_x and 7.5 tons per day of PM emissions in the Basin. Clearly, significant emission reductions will be required from mobile sources, especially from the heavy-duty sector, to attain the federal clean air standards.

The use of alternative fuels in heavy-duty vehicles can provide significant reductions in NO_x and particulate emissions. The current NO_x emissions standard for heavy-duty engines is 0.2 g/bhp-hr. The SCAQMD, along with various local, state and federal agencies, continues to support the development and demonstration of alternative fueled heavy-duty engine technologies, using compressed natural gas (CNG) and liquefied natural gas (LNG), for applications in heavy-duty transport trucks, transit and school buses, rail operations, and refuse collection and delivery vehicles to meet future federal emission standards.

Stationary Clean Fuel Technologies

Given the limited funding available to support low emission stationary source technology development, this area has historically been limited in scope. To gain the maximum air quality benefits in this category, higher polluting fossil fuel-fired electric power generation needs to be replaced with clean renewable energy resources or other advanced near zero-emission technologies, such as solar, wind, geo-thermal energy, bio-mass conversion and stationary fuel cells. Although combustion sources are lumped together as stationary, the design and operating principles vary significantly and thus also the methods and technologies for control of their emissions. Included in the stationary category are boilers, heaters, gas turbines and reciprocating engines. Boilers and heaters vary in size, heat input, process conditions and operating ranges. Gas turbines vary greatly in size and application and are typically natural gas-fired with add-on controls to clean up the flue gas. Stationary ICEs can be either rich-burn or lean-burn. The core technologies for this category focus on using advanced combustion processes, development of catalytic add-on controls, alternative fuels and technologies and stationary fuel cells in novel applications.

Program Review

In 1990, the SCAQMD initiated an annual review of its technology advancement program by an external panel of experts. That external review process has evolved, in response to SCAQMD policies and legislative mandates, into two external advisory groups. The Technology Advancement Advisory Group (one of six standing Advisory Groups that make up the SCAQMD

Advisory Council) is made up of stakeholders representing industry, academia, regulatory agencies, the scientific community and environmental impacts. The Technology Advancement Advisory Group serves to:

- Coordinate the SCAQMD program with related local, state and national activities;
- Review and assess the overall direction of the program; and
- Identify new project areas and cost-sharing opportunities.

In 1999, the second advisory group was formed as required by SB 98 (Alarcon). Under H&SC Section 40448.5.1(c), this advisory group must comprise 13 members with expertise in clean fuels technology and policy or public health and appointed from the scientific, academic, entrepreneurial, environmental and public health communities. This legislation further specified conflict-of-interest guidelines prohibiting members from advocating expenditures towards projects in which they have professional or economic interests. The objectives of the SB 98 Clean Fuels Advisory Group are to make recommendations regarding projects, plans and reports, including approval of the required annual report prior to submittal to the SCAQMD Governing Board. Also in 1999, in light of the formation of the Clean Fuels Advisory Group, the SCAQMD also revisited the charter and membership of the Technology Advancement Advisory Group to ensure their functions would complement each other.

On an as-needed basis, changes to the composition of the Clean Fuels Advisory Group are reviewed by the SCAQMD Board while changes to the Technology Advancement Advisory Group are reviewed by the SCAQMD Board's Technology Committee. In 2012 membership changes were considered and approved by the SCAQMD Board on May 4, 2012. Subsequent membership changes to both advisory groups will be considered by the SCAQMD Board and its Technology Committee, respectively, as part of consideration of the 2013 Annual Report and 2014 Plan Update. The current proposed members of the SB 98 Clean Fuels Advisory Group and Technology Advancement Advisory Group are listed in Appendix A.

The review process of the Clean Fuels Program now includes at least two full-day retreats of the two Advisory Groups, review by other technical experts, review by the Technology Committee of the SCAQMD Governing Board, a public hearing of the Annual Report and Plan Update before the full SCAQMD Governing Board and finally submittal of the Annual Report to the Legislature by March 31 of every year.

PROGRAM STRATEGY AND IMPACT

Scope and Benefits of the Clean Fuels Program

To reap the maximum emissions benefits from any technology, widespread deployment and thus end-user acceptance must occur. The product manufacturers must overcome technical and market barriers to ensure a competitive and sustainable business. Unfortunately, the time needed to overcome these barriers can be long and the costs high, which tends to discourage both manufacturers and end-users from considering advanced technologies. A combination of real-world demonstrations, education, outreach and regulatory impetus and incentives is necessary to catalyze new, clean technologies. The Clean Fuels Program addresses these needs by co-funding research, development, demonstration and deployment projects to share the risk of emerging technologies with their developers and eventual users.

Figure 3 provides a conceptual design of the wide scope of the Clean Fuels Program. As mentioned in the Core Technologies section, various stages of technology projects are funded not only to provide a portfolio of emissions technology choices but to achieve emission reduction benefits in the nearer as well as over the longer term.

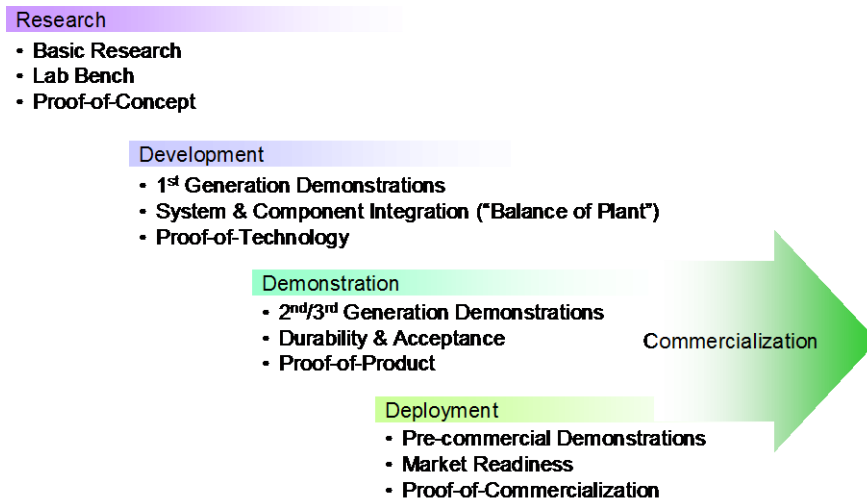


Figure 3: Stages of Clean Fuels Program Projects

Due to the nature of these advanced technology research, development, demonstration and deployment projects, the benefits are difficult to quantify since their full emission reduction potential may not be realized until sometime in the future, or perhaps not at all if displaced by superior technologies. Nevertheless, a good indication of the impact and benefits of the Clean Fuels Program overall is provided by this selective list of sponsored projects that have resulted in commercialized products or helped to advance the state-of-the-technology.

- CNG Engine Development for Heavy-Duty Vehicles
 - Emission Solutions: 7.6L (NG)
 - Cummins Westport: C8.3L (CNG, LNG), B5.9L (CNG) L10 (CNG), ISL G 8.9L (CNG, LNG)
 - Westport Power: ISX 15L (LNG), Westport GX 15 L (dual fuel)
 - Detroit Diesel: Series 60G (CNG/LNG), Series 50G (CNG/LNG);

- John Deere: 6068 (CNG), 6081 (CNG);
 - Mack: E7-400G (LNG); and
 - Clean Air Partners/Power Systems (Caterpillar): 3126B (Dual Fuel), C-10 (Dual Fuel), C-12 (Dual Fuel).
- Fuel Cell Development and Demonstrations
- Ballard Fuel Cell Bus (first of its kind);
 - ISE/ThunderPower Fuel Cell Bus;
 - Sunline Transit Agency Advanced Fuel Cell Bus projects;
 - Commercial Stationary Fuel Cell Demonstration with UTC and SoCalGas (first of its kind); and
 - Orange County Sanitation District hydrogen and combined heat and power generation from biogas using molten carbonate fuel cell technology.
- Electric and Hybrid Electric Vehicle Development and Demonstrations
- EPRI hybrid vehicle evaluation study;
 - Hybrid electric vehicle demonstrations with SCE, UC Davis and AC Propulsion;
 - Plug-in Hybrid Electric Van with EPRI, DaimlerChrysler and SCE;
 - Hybrid electric delivery trucks with Azure Dynamics, NREL and FedEx;
 - Plug-in hybrid work truck with Odyne Systems;
 - Proterra battery electric transit bus and fast charging system;
 - Municipal battery electric utility truck;
 - South Bay City Council of Governments' electric vehicle project;
 - EVI/UPS electric truck; and
 - TransPower battery electric heavy-duty truck
- Aftertreatment Technologies for Heavy-Duty Vehicles
- Johnson Matthey and Engelhard trap demonstrations on buses and construction equipment; and
 - Johnson Matthey SCRT and SCCRT NO_x and PM reduction control devices on heavy-duty on-road trucks.

SCAQMD played a leading or major role in the development of these technologies, but their benefits could not have been achieved without all stakeholders (i.e., manufacturer, end-users and government) working collectively to overcome the technology, market and project-specific barriers encountered at every stage of the research, development, demonstration and deployment process.

Overcoming Barriers

Commercialization and implementation of advanced technologies come with a variety of real-world challenges and barriers. These include project-specific issues as well as general technology concerns.

Technology Implementation Barriers

- Viable commercialization path
- Technology price/performance parity with conventional technology
- Consumer acceptance

Project-Specific Issues

- Identifying a committed demonstration site
- Overall project cost and cost-share using public monies
- Securing the fuel

- Fuel availability/convenience issues
- Certification, safety and regulatory barriers
- Quantifying emissions benefits
- Sustainability of market and technology
- Identifying and resolving real & perceived safety issues
- Quantifying the actual emissions benefits
- Viability of the technology provider

Other barriers include reduced or shrinking research budgets, infrastructure and energy uncertainties and risks, sensitivity to multi-media environmental impacts and the need to find balance between environmental needs and economic constraints. The SCAQMD seeks to address these barriers by establishing relationships through unique public-private partnerships with key stakeholders; e.g., industry, end-users and other government agencies with a stake in developing clean technologies. Partnerships that involve all the key stakeholders have become essential to address these challenges in bringing advanced technologies from development to commercialization.

Each of these stakeholders and partners contributes more than just funding. Industry, for example, can contribute technology production expertise as well as the experience required for compatibility with process operations. Academic and research institutes bring state-of-the-technology knowledge and testing proficiency. Governmental and regulatory agencies can provide guidance in identifying sources with the greatest potential for emissions reduction, assistance in permitting and compliance issues, coordinating of infrastructure needs and facilitation of standards setting and educational outreach. Often, there is considerable synergy in developing technologies that address multiple goals of public and private bodies regarding the environment, energy and transportation.

Strategy and Impact

The SCAQMD actively seeks additional partners for its program through participation in various working groups, committees and task forces. This participation has resulted in coordination of the SCAQMD program with a number of state and federal government organizations, including CARB, CEC, U.S. EPA and U.S. DOE and several of its national laboratories. Coordination also includes the AB 2766 Discretionary Fund Program administered by the Mobile Source Air Pollution Reduction Review Committee (MSRC), various local air districts, National Association of Fleet Administrators (NAFA), major local transit districts and local gas and electric utilities. The list of organizations with which the SCAQMD coordinates research and development activities also includes organizations specified in H&SC Section 40448.5.1(a)(2).

In addition, the SCAQMD holds periodic meetings with several organizations specifically to review and coordinate program and project plans. For example, the SCAQMD staff meets with CARB staff to review research and development plans, discuss project areas of mutual interest, avoid duplicative efforts and identify potential opportunities for cost-sharing. Periodic meetings are also held with industry-oriented research and development organizations, such as the Manufacturers of Emission Controls Association (MECA), the California Fuel Cell Partnership (CaFCP), the California Stationary Fuel Cell Collaborative and the California Natural Gas Vehicle Partnership (CNGVP). The coordination efforts with these various stakeholders have resulted in a number of co-sponsored projects.

Descriptions of some of the key contracts executed in CY 2013 are provided in the next section of this report. It is noteworthy that most of the projects are co-sponsored by various funding organizations and include the active involvement of manufacturers. Such partnerships are essential to address commercialization barriers and to help expedite the implementation of

advanced low emission technologies. Table 1 below lists the major funding agency partners and manufacturers actively involved in SCAQMD projects for this reporting period. It is important to note that, although not listed, there are many other technology developers, small manufacturers and project participants who make important contributions critical to the success of the SCAQMD program. These partners are identified in the more detailed 2013 Project Summaries (beginning page 31) contained within this report.

Table 1: SCAQMD Major Funding Partners in CY 2013

| Research Funding Organizations | Major Manufacturers/Providers |
|---|--|
| California Air Resources Board | Ports of Los Angeles & Long Beach |
| California Energy Commission | Southern California Gas Company |
| U.S. & California Departments of Transportation | University of California Riverside/ CE-CERT |
| U.S. Department of Energy | West Virginia University |
| U.S. Environmental Protection Agency | |

The following two subsections broadly address the SCAQMD’s impact and benefits by describing specific examples of accomplishments and commercial—or near-commercial—products supported by the Clean Fuels Program in CY 2013. Such examples are provided in the following sections on Technology Advancement’s Research, Development and Demonstration projects and Technology Deployment and Commercialization efforts.

Research, Development and Demonstration

Important examples of the impact of the SCAQMD research and development coordination efforts are: (a) development of hybrid system for Class 7 heavy-duty vehicle applications; (b) development and demonstration of catenary Class 8 trucks; and (c) development, integration and demonstration of heavy-duty natural gas engines and vehicles.

Develop Hybrid System for Class 7 Heavy-Duty Vehicle Applications

The Capstone project will develop a Class 7 series hybrid refrigeration truck. The series hybrid refrigeration truck will feature up to ten miles of zero “tailpipe” emissions driving, as well as provide auxiliary electric power to the refrigeration unit; thereafter, switching to ultra-low emission series hybrid drive for full purpose duties after the battery has been depleted. The series hybrid drive system includes a diesel-fueled microturbine which is anticipated to yield emissions that are significantly below CARB 2010 standards.

The technology used on this truck is an electric drive series hybrid truck with a microturbine serving as the range extender or auxiliary power unit. The series hybrid architecture allows the electric motor to provide the full motive propulsion force for the vehicle, using on-board energy stored in a lithium ion battery that will be charged from the grid. The electrical energy stored in the on-board battery will also be used to power the refrigeration system for the box unit that will be installed on the vehicle. Upon breaching the battery’s lower state of charge threshold, the microturbine generator will be used to provide power to the vehicle’s DC bus to maintain the battery’s lower state of charge threshold, which will extend the driving range and refrigeration capabilities of the vehicle. The figure below shows a simplified diagram of the major components.

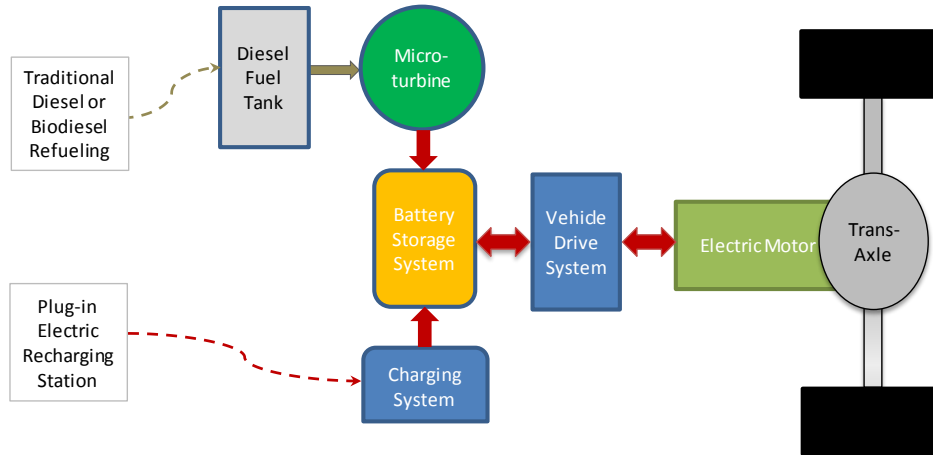


Figure 4: Diagram of the Microturbine Generator's Major Components

The battery storage system in this series hybrid drive system can be recharged or maintained in three ways:

- Utility Power – by plugging the vehicle into the utility grid. The vehicle therefore has some “battery only” range that depends on the size of the battery storage and the drive cycle.
- Microturbine – acting as a range extender, the microturbine can be turned on to recharge the batteries while the vehicle is in use, thereby significantly extending the utilization of the vehicle compared to relying only on the battery storage system.
- Regenerative Braking – the motor and vehicle drive system are able to pass power both to the wheels to propel the truck, but also take power from the wheels to recover a significant amount of the vehicle momentum during braking. Capturing this braking energy can have a significant impact on overall vehicle efficiency, especially in Pickup and Delivery drive cycles that involve a moderate amount of stop and go.

The electric drive system is well suited for trucks with significant auxiliary loads; such as the refrigeration truck being built for this project. The photo below shows the prototype Class 7 hybrid truck with key drive components installed, but prior to the installation of the refrigeration box unit that will be demonstrated as part of this program.

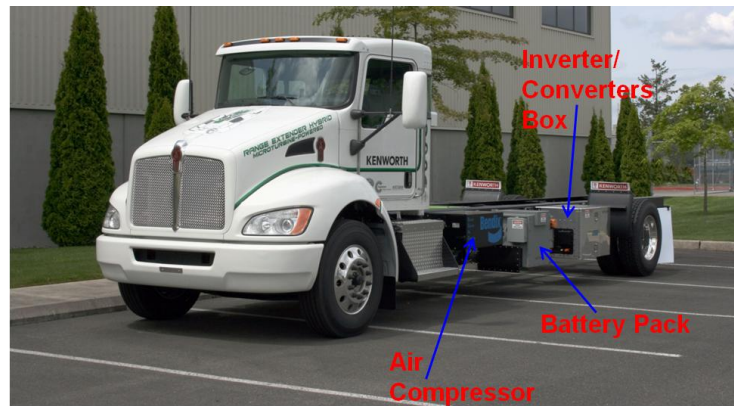


Figure 5: Prototype Class 7 Hybrid Truck

Develop and Demonstrate Catenary Class 8 Trucks

The electrification of transportation technologies has the potential to significantly reduce criteria pollutant and greenhouse gas emissions. This can provide substantial benefits to communities, neighborhoods and school areas where these vehicles operate. The TransPower “ElecTruck” drive system is a zero emission solution that eliminates 100% of the harmful emissions produced by road vehicles, at the point of operation. TransPower has selected port trucks as its initial target market because of the high potential for environmental benefits if these vehicles can be converted to electric propulsion.

TransPower will demonstrate two zero emission battery electric Class 8 truck at the Ports of Los Angeles and Long Beach and intermodal facilities. TransPower will integrate electric drive components into two Class 8 trucks. One truck will be used as a static test vehicle to test new components, and the other will be placed into revenue service carrying cargo containers at the Ports of Los Angeles and Long Beach to intermodal facilities. The battery-electric drive system will utilize high-power drive motors and inverters and energy will be stored in high-energy lithium battery packs. The revenue service vehicle will be operated by a leading drayage firm and closely monitored under real-world operating conditions. In parallel with the initial demonstration, TransPower will work with a subcontractor to develop a power converter using new high-frequency silicon insulated gate bipolar transistors and liquid-cooled heat sinks, leapfrog technologies that offer significant potential benefits including size and weight reductions that will eliminate the need for a separate battery charger.

The “ElecTruck” project has two overarching objectives: (1) to demonstrate a superior electric drive technology for heavy-duty trucks, and (2) to use this demonstration project as a springboard for rapid commercialization of a modular electric drive system. TransPower’s strategy is to develop and demonstrate a reliable electric propulsion system for heavy-duty vehicles and be the first to market with a system sufficiently reliable and cost-effective for everyday use in large trucks. The initial focus will be on the port drayage market, where vehicles have short operating range requirements and where environmental concerns are forcing the ports and others to offer substantial incentives for adoption of clean vehicle technology.



Figure 6: TransPower Truck at Facility in Poway, CA

In July 2010, TransPower received a \$1 million grant from the California Energy Commission (CEC), which TransPower and its partners will match with \$1 million in cash and in-kind contributions. This will enable development of the new integrated converter-charger and a high-energy battery pack, and testing of these components in a static test truck.

Develop, Integrate and Demonstrate Heavy-Duty Natural Gas Engines and Vehicles

The SCAQMD Board adopted a series of clean fuel fleet rules to reduce mobile source emissions within the SCAQMD’s regulatory jurisdiction. The fleet rules require certain public entities and special districts, such as air, water, sanitation and school districts, with fifteen or more heavy-duty vehicles to acquire CARB-certified alternative-fueled heavy-duty vehicles when adding new vehicles or forming a new fleet. These rules have helped to advance natural gas engine technology and to expand the natural gas engine market into a wider range of heavy-duty vehicle

applications. Specifically, on-road natural gas engines are now being used on a limited basis as an alternative to diesel engines in transit, refuse and goods movement applications. While the number of natural gas engines has grown, there is still a need to develop natural gas engines in the 11- to 14-liter range to fill the wide array of fleet applications currently served solely by diesel engines. As such, the SCAQMD has been working with NREL, the CEC and Southern California Gas Company (SoCalGas) to accelerate the development, integration and demonstration of natural gas engines ranging in sizes from 11 to 14 liters suitable for transit, refuse and goods movement applications. In 2011, the Board awarded a contract to U.S. DOE's NREL for \$3,055,000 to develop, integrate and demonstrate three different heavy-duty natural gas engines. The three engines will be used in refuse, transit and Class 8 heavy-duty truck applications and comply with the U.S. EPA 2010 heavy-duty emissions standards of 0.01 g/bhp-hr PM and 0.2 g/bhp-hr NO_x. The contract, executed in the form of modification to NREL's CRADA, was executed in 2013.



Figure 7: Heavy-Duty Engine

The first project is with Cummins Westport, Inc. (CWI) to develop and optimize a spark-ignited 11.9-liter ISX12 G CNG engine suitable for refuse and Class 8 applications. CWI successfully completed the project, with development of the ISX12 G engine as a spark-ignited, stoichiometric, cooled exhaust gas recirculation (SI-EGR), natural gas engine certified to the EPA/CARB heavy-duty on-highway 2013 emission standards. CWI commercially launched the ISX12 G engine with ratings up to 350 HP and 1450 lb-ft beginning in mid-April 2013, and with ratings up to 400 HP and 1450 lb-ft in August 2013. This engine is targeted at regional haul tractor and vocational (e.g. refuse collection, concrete mixer) truck customers. The ISX12 G engine also meets EPA greenhouse gas legislated requirements and Engine Manufacturer's Diagnostics (EMD+) certification. The ISX12 G engine met final certification (including Deterioration Factor) at:

- 0.15 g/bhp-hr NO_x for both EPA and CARB (vs. 0.20 limit)
- 0.03 g/bhp-hr NMHC for both EPA and CARB (vs. 0.14 limit)
- 8.4 g/bhp-hr (EPA) and 8.7g/bhp-hr (CARB) CO (vs. 15.5 limit)
- 0.001 g/bhp-hr (EPA) and 0.003 g/bhp-hr (CARB) PM (vs. 0.01 limit)

The ISX12 G engine is now available as a factory-installed option in a number of Class 8 truck and tractor models from different OEMs including Autocar, Freightliner, Kenworth, Mack, Peterbilt and Volvo.

The second project is Emissions Solutions, Inc., (ESI) to develop engine hardware and controls to convert a 13-liter Navistar diesel engine to a CNG engine. This project has been discontinued because ESI is no longer in business.

Finally, the third project is with Southwest Research Institute (SwRI) to convert an 11-liter Doosan lean-burn engine to a stoichiometric engine and integrate it into a refuse chassis. This project is on-going with an anticipated completion date in 2015.

Technology Deployment and Commercialization

One function of the Clean Fuels Program is to help expedite the deployment and commercialization of low and zero emission technologies and fuels needed to meet the requirements of the AQMP control measures. In many cases, new technologies, although considered “commercially available,” require assistance to fully demonstrate the technical viability to end-users and decision-makers.

The following projects contracted during the CY 2013 reporting period illustrate the impact of the SCAQMD’s technology deployment and commercialization efforts.

California PEV Readiness Planning

DOE’s Clean Cities Program awarded California \$1 million for PEV infrastructure planning, one of 16 awards nationwide out of a total of \$8.5 million made through the Clean Cities’ Community Readiness and Planning for PEV and Charging Infrastructure. A statewide partnership with SCAQMD, BAAQMD, PEVC, Clean Cities Coalitions in California and other regional entities enabled the state of California to work together towards PEV readiness, with this joint effort being led by SCAQMD. The statewide partnership consisted of six regional collaborations, many of which also received CEC funding on Regional Plans to Support PEV Readiness, designed to support DOE Clean Cities Program funding for PEV infrastructure planning. The South Coast region received three CEC planning grants to support subregional studies by the Coachella Valley Association of Governments, South Bay Cities Council of Governments, and Western Riverside Council of Governments.

The California PEV Readiness Project advanced the state of PEV readiness in California by creating six regional PEV infrastructure plans for the South Coast, Bay Area, San Diego, Sacramento, Central Coast, and San Joaquin Valley regions, and a statewide PEV readiness guidelines document. The California PEV Readiness Collaborative created a PEV readiness toolkit to assist local government agencies in becoming PEV ready. There were six education outreach workshops to communicate the benefits of PEV readiness to local communities. These project elements helped to ensure a unified statewide approach to planning and implementing critical PEV infrastructure activities to support the California PEV market.

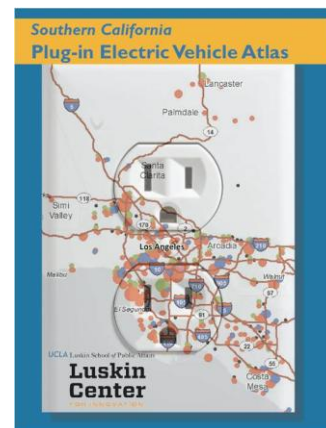


Figure 8: South Coast PEV Atlas of Deployed EV Infrastructure

As part of the California PEV Readiness Project, the UCLA Luskin Center was engaged by SCAG to develop the South Coast PEV readiness plan through a competitive RFP process. The UCLA Luskin Center has significant expertise on PEV readiness issues and has authored several policy documents, including the PEV market in Los Angeles and addressing challenges to installing infrastructure in multi-unit dwellings. The Southern California PEV Readiness Plan was the winner of the 2013 Planning Excellence Award by the Los Angeles section of the American Planning Association. This supplemental project, executed in 2013 at the request of SCAG, was to develop additional PEV readiness elements for the South Coast PEV readiness plan for the DOE Clean Cities grant, including an analysis of barriers of required and optional PEV readiness elements such as permitting and inspection, training and education, workplace and fleet charging, and multi-unit dwelling charging. It also provides a much needed analysis of two challenge areas

identified by the California PEV Collaborative in multi-unit dwelling and workplace charging, for which two new working groups have been created.

Develop Hydrogen Network Investment Plan

California has committed to transition the light-duty vehicle fleet to electric drive, including both “plug-in” battery electric vehicles (BEVs) and fuel cell electric vehicles (FCEVs), in order to meet long term greenhouse gas, air quality and energy diversity goals. FCEVs, which run on hydrogen gas, are widely accepted as a critical component of this transition. They alone provide the same performance, range and utility as gasoline vehicles, while reducing greenhouse emissions between 50-100 percent, depending on how the hydrogen is made. The leading automakers have committed to fuel cell technology and have announced plans to commercialize FCEVs in the 2015 to 2017 timeframe. The remaining barrier is fueling infrastructure - stations need to be built in advance of the cars to enable automakers to sell the cars to consumers.

State government is providing leadership of the hydrogen transition in many ways, including having provided grants covering 65% of capital costs (up to \$1.5 million per station), in the hope that this will be sufficient to attract these investors. Private stakeholders have not responded to the CEC grant program at the scale or timeframe needed to provide sufficient coverage for the early market FCEV launch. The latest grant solicitation was undersubscribed, and previously awarded stations are taking a long time to open. The Hydrogen Network Investment Plan (HNIP) attempts to explain why. The findings are based on 18 months of detailed stakeholder interaction and lessons from a financial model built by Energy Independence Now (EIN) to understand the economic impacts of a variety of incentives under a range of plausible market scenarios and determine what is needed to stimulate investment in the hydrogen network. Discussion with potential investors show that uncertainty remains high and confidence low, and that funding alone cannot compensate for the current uncertainty about when a large scale, FCEV market will emerge. Given the high operating costs of stations, early station investors face possible long, negative financial cash flows as they wait for cars to appear, capital costs-aside. At the same time, automakers fear these stations might close before they have time to get cars to market.

To neutralize both of these risks, the HNIP shows how the government could modify its grant program to share in the financial risk of market delays, including the addition of market assurance grants (MAGs), regular payments that would support operations and maintenance expenses until they can be covered by revenues from hydrogen sales. MAGs can be a difference maker if investors see a credible pathway and plan to reach long-term FCEV success.

Even with significant capital cost-share and downside protection such as MAG grants, it remains unclear if the government can attract appropriate “first-movers” into this sector, namely entities that want to build and operate dozens of stations on a long-term basis. Some investors suggest that this market is one where a “fast-follower” will be more successful, gaining market share by building bigger and better stations with much greater market certainty once cars are on the road. To counter this problem, the state needs to explore what kind of “upside” it can create for early investors, in the form of non-monetary, strategic advantages that come from being a government-backed first mover. Unless the government can bring these investors off the sideline or increase investment of existing participants, early market investment may remain stalled.



2013 Hydrogen & Fuel Cell Progress Update

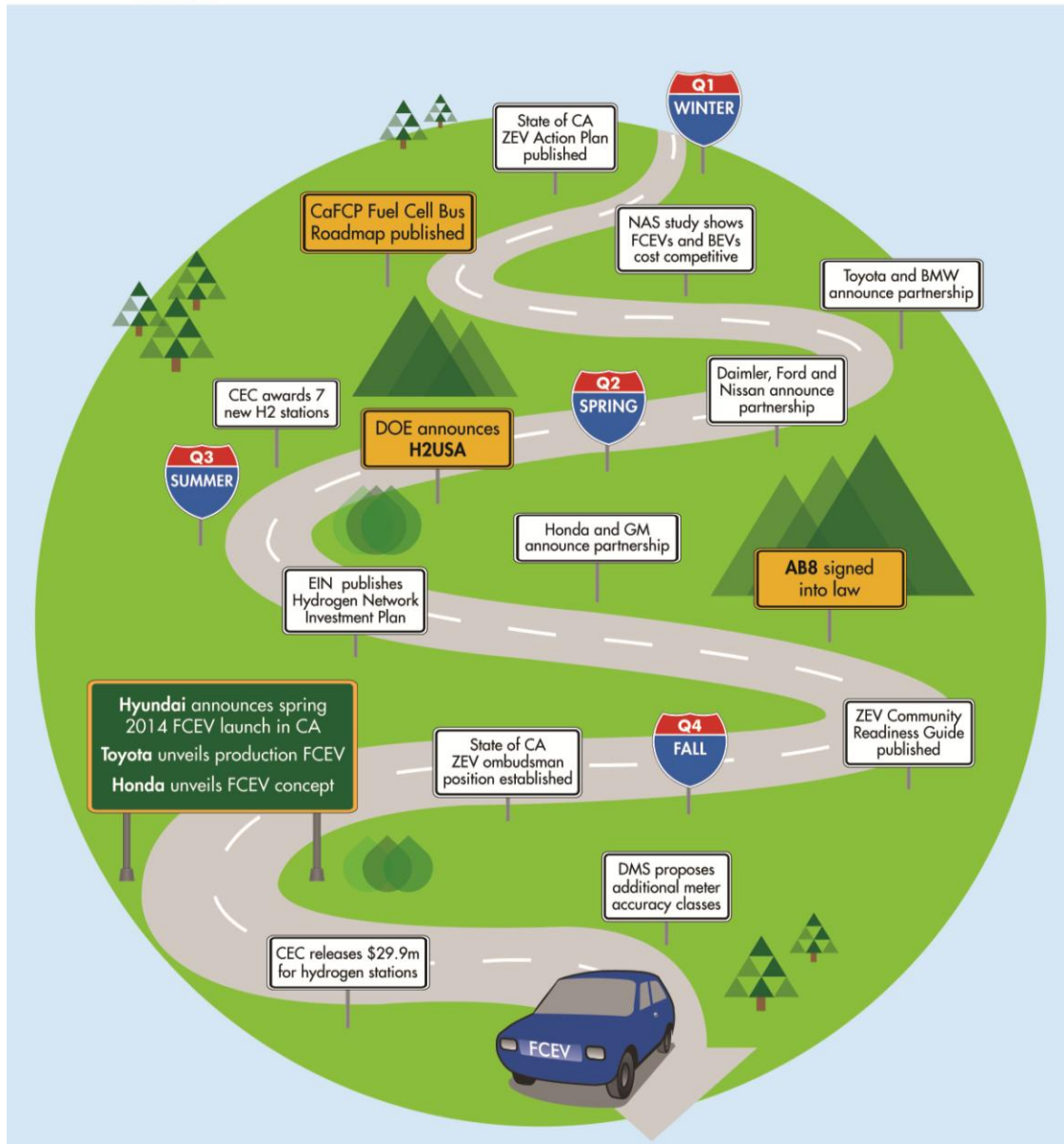


Figure 9: Giant Steps Forward in 2013 for Fuel Cell Electric Vehicles and Hydrogen Stations

It is anticipated that Phase 2 of this effort will begin in 2014. Phase 2 would refine the draft HNIP and coordinate with government and industry to build the hydrogen market and participation and influence hydrogen infrastructure deployment.

2013 FINANCIAL SUMMARY

The SCAQMD Clean Fuels Program supports clean fuels and technologies that appear to offer the most promise in reducing emissions, promoting energy diversity, and in the long term, providing cost-effective alternatives to current technologies. In order to address the wide variety of pollution sources in the Basin and the need for reductions now and in the future, using revenue from a \$1 motor vehicle registration fee (see Program Funding on page 4), the SCAQMD seeks to fund a wide variety of projects to establish a diversified technology portfolio to proliferate choices with the potential for different commercial maturity timing. Given the evolving nature of technology and changing market conditions, such a representation is only a “snapshot-in-time,” as reflected by the projects approved by the Governing Board.

As projects are approved by the Governing Board and executed into contracts throughout the year, the finances may change to reflect updated information provided during the contract negotiation process. As such, the following represents the status of the Clean Fuels Fund as of December 31, 2013.

Funding Commitments by Core Technologies

The SCAQMD continued its successful leveraging of public funds with outside investment to support the development of advanced clean air technologies. During the period January 1 through December 31, 2013, a total of 48 contracts, projects or studies that support clean fuels were executed or amended, as shown in Table 2 (page 24). The major technology areas summarized are: hybrid/electric technologies, infrastructure and deployment, fuels/emission studies, emission control technologies, hydrogen technology and infrastructure, mobile fuel cell technologies, engine systems, stationary clean fuel technologies, health impacts studies, outreach and technology transfer. The distribution of funds based on technology area is shown graphically in Figure 10 (page 22). This wide array of technology support represents the SCAQMD’s commitment to researching, developing, demonstrating and deploying potential near-term and longer-term technology solutions.

The project commitments that were contracted or purchased for the 2013 reporting period are shown below with the total projected project costs:

| | |
|--|--------------|
| • SCAQMD Clean Fuels Fund Contribution | \$7,542,654 |
| • Total Cost of Clean Fuels Projects | \$23,263,776 |

Each year, the SCAQMD Governing Board approves funds to be transferred to the General Fund Budget for Clean Fuels administration. For 2013, the Board transferred \$800,000 for workshops, conferences, co-sponsorships and outreach activities as well as postage, supplies and costs for special conferences. Only the funds committed by December 31, 2013, are included within this report. Any portion of the Clean Fuels Funds not spent by the end of Fiscal Year 2013-14 ending June 30, 2014, will be returned to the Clean Fuels Fund.

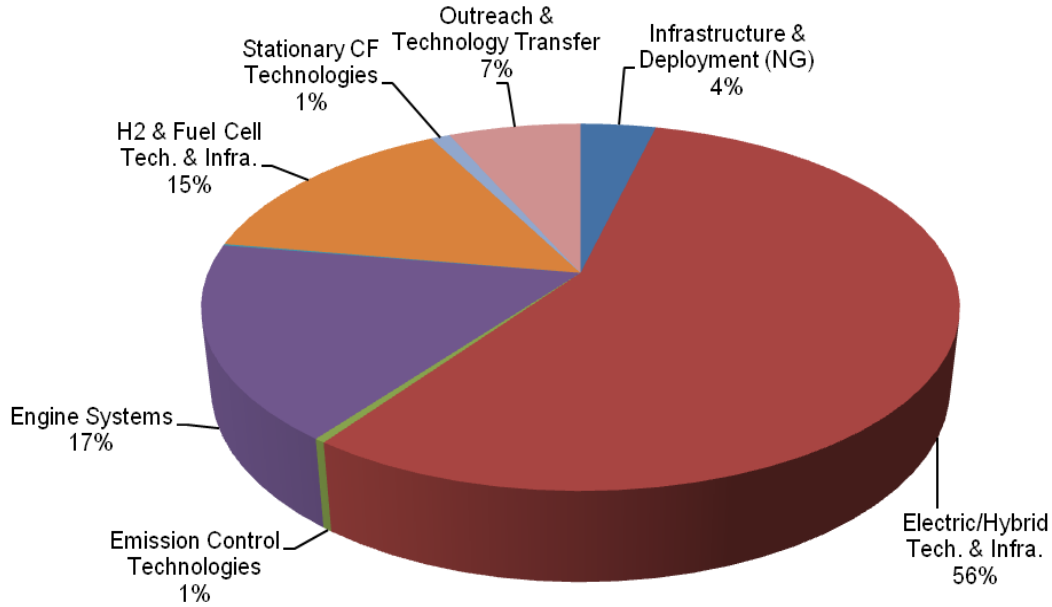
Partially included within the SCAQMD contribution are supplemental sponsorship revenues from various organizations that support these technology advancement projects. This supplemental revenue for pass-through contracts executed in 2013 totaling \$2,040,750 is listed within Table 3 (page 26) for contract.

Appendix B lists the 124 Clean Fuels Fund contracts that were open and active as of January 1, 2014.

For Clean Fuels executed and amended contracts, projects and studies in 2013, the average SCAQMD contribution is approximately 32 percent of the total cost of the projects, identifying

that each dollar from the SCAQMD was leveraged with more than three dollars of outside investment.

During 2013, the distribution of funds for SCAQMD executed contracts, purchases and contract amendments with additional funding for the Clean Fuels Program totaling approximately \$7.5 million are shown in Figure 10 below.



**Figure 10: Distribution of Funds for Executed Clean Fuels Projects
CY 2013 (\$7.5 million)**

Table 2 (page 26) provides a breakdown of these \$7.5 million awards. Table 3 (page 26) provides information on outside funding recognized and received into the Clean Fuels Fund (approximately \$2 million) for contracts executed in CY 2013. Additionally, the SCAQMD continued to seek funding opportunities and Table 4 (page 26) lists the additional \$15,810,828 awarded in 2013 for projects that will be implemented as part of the Clean Fuels Program or which align well or are complementary to the Clean Fuels Program. Table 5 (page 27) provides a comprehensive summary and project status of the nearly \$111 million in federal and state revenue awarded (including awards made through the American Recovery and Reinvestment Act) to SCAQMD from 2009 and 2012.

Review of Audit Findings

State law requires an annual financial audit after the closing of each SCAQMD’s fiscal year. The financial audit is performed by an independent Certified Public Accountant selected through a competitive bid process. For the fiscal year ended June 30, 2013, the firm of Simpson and Simpson, CPAs conducted the financial audit. As a result of this financial audit, a Comprehensive Annual Financial Report (CAFR) was issued. There were no adverse internal control weaknesses with regard to SCAQMD financial statements, which include the Clean Fuels Program revenue and expenditures. Simpson and Simpson CPAs gave the SCAQMD an “unqualified opinion,” the highest obtainable. Notably, the SCAQMD has achieved this rating on all prior annual financial audits.

Project Funding Detail by Core Technologies

The 48 new and continuing contracts, projects and studies that received SCAQMD funding in 2013 are summarized in Table 2 together with the funding authorized by the SCAQMD and by the collaborating project partners.

Table 2: Contracts Executed or Amended (w/\$) between January 1 & December 31, 2013

| Contract | Contractor | Project Title | Start Term | End Term | AQMD \$ | Project Total \$ |
|--|--|--|-------------------|-----------------|----------------|-------------------------|
| Infrastructure and Deployment | | | | | | |
| 12853 | Rainbow Disposal Company, Inc. | Upgrade CNG Fueling Station | 03/08/13 | 12/31/18 | 200,000 | 400,000 |
| 13401 | Nite-Hawk Sweepers LLC | Demonstrate Natural Gas-Powered Parking Lot Sweepers | 08/28/13 | 12/31/15 | 90,000 | 200,000 |
| Fuels/Emissions Studies | | | | | | |
| 13451 | Energy Solutions | Perform Passenger Vehicle Tire Efficiency Study | 06/28/13 | 12/27/13 | 10,000 | 16,000 |
| Emission Control Technologies | | | | | | |
| 13407 | Chaffey Joint Union High School District | Demonstrate Diesel Particulate Filter Technology on Two Diesel School Buses | 05/18/13 | 03/31/14 | 30,000 | 45,000 |
| Electric/Hybrid Technologies & Infrastructure | | | | | | |
| 11615 | Parker Hannifin | Develop & Demonstrate Up to Four Heavy-Duty Hydraulic Hybrid Vehicles | 01/18/13 | 12/31/14 | 250,000 | 2,000,000 |
| 13058 | Capstone Turbine Corporation | Develop Microturbine Series Hybrid System for Class 7 Heavy-Duty Vehicle Applications | 08/12/13 | 11/30/14 | 360,000 | 1,210,000 |
| 13149 | University of California, Los Angeles | Develop South Coast PEV Readiness Plan | 01/18/13 | 06/30/14 | 32,000 | 63,500 |
| 13404 | Penske Honda of Ontario | Lease Two Honda Fit Electric Vehicles for Three Years | 05/02/13 | 05/01/16 | 31,307 | 31,307 |
| 13410 | Selman Chevrolet Company | Lease Three 2013 Chevrolet Volt Extended-Range Electric Vehicles for Three Years | 04/03/13 | 04/02/16 | 41,084 | 41,084 |
| Various | Various | Install & Upgrade EV Charging Infrastructure (Administer SoCalEV Infrastructure Project) | 01/01/13 | 06/30/15 | 840,750 | 840,750 |
| 13426 | Transportation Power, Inc. | Develop & Demonstrate Catenary Class 8 Trucks (1 Electric & 1 CNG Platform) | 06/07/13 | 06/06/16 | 2,617,887 | 3,182,795 |
| 13429 | Longo Toyota | Lease One Toyota RAV4 Electric Vehicle for Three Years | 04/19/13 | 04/18/16 | 19,618 | 19,618 |
| 13439 | City of Carson | MOU for Catenary Zero Emission Goods Movement Project | 10/01/13 | 09/30/16 | 0 | 0 |
| Purchase Order | ATVLS, Inc. | Install Electric Vehicle Chargers | 02/13/13 | 02/13/13 | 19,985 | 19,985 |
| Purchase Order | Clean Fuel Connection, Inc. | Install Electric Vehicle Chargers | 01/29/13 | 02/20/13 | 17,389 | 17,389 |
| Engine Systems | | | | | | |
| 13168 | National Renewable Energy Laboratory | Develop, Integrate & Demonstrate Heavy-Duty Natural Gas Engines and Vehicles | 05/22/13 | 12/31/15 | 1,300,000 | 1,300,000 |
| Mobile Fuel Cell Technologies | | | | | | |
| 10501 | American Honda Motor Company, Inc. | Lease One Clarity Fuel Cell Vehicle for Three Years | 01/21/10 | 09/11/13 | 5,232 | 5,232 |

Table 2: Contracts Executed or Amended (w/\$) between January 1 & December 31, 2013

| Contract | Contractor | Project Title | Start Term | End Term | AQMD \$ | Project Total \$ |
|---|--|---|-------------------|-----------------|----------------|-------------------------|
| Mobile Fuel Cell Technologies (cont'd) | | | | | | |
| 13155 | Fletcher Jones Motor Cars Inc. (Mercedes-Benz) | Lease Two F-Cell Fuel Cell Vehicles for Two Years | 02/08/13 | 02/08/15 | 30,397 | 30,397 |
| 14054 | Bevilacqua-Knight, Inc. | Participate in California Fuel Cell Partnership for Calendar Year 2013 and Provide Support for Regional Coordinator | 01/01/13 | 12/31/13 | 137,800 | 1,676,800 |
| 14139 | Hyundai America Technical Center Inc. | No-Cost Lease of Fuel Cell Vehicle for Two Years | 12/13/13 | 12/12/15 | 0 | 0 |
| Hydrogen Technologies & Infrastructure | | | | | | |
| 10061 | Hydrogenics Corporation | Maintenance & Data Management for the SCAQMD Hydrogen Fueling Station | 10/30/09 | 01/31/15 | 100,000 | 100,000 |
| 11150 | Hydrogen Frontier, Inc. | Maintain & Operate City of Burbank Hydrogen Fueling Station | 11/24/10 | 01/23/16 | 275,000 | 275,000 |
| 13259 | Air Products and Chemicals, Inc. | Hydrogen Station Operation & Maintenance for Five Cities Hydrogen Program | 03/26/13 | 09/25/14 | 300,000 | 300,000 |
| 13400 | Energy Independence Now | Develop Hydrogen Network Investment Plan | 04/05/13 | 01/04/15 | 50,000 | 130,000 |
| 14067 | University of California, Irvine | Develop Hydrogen Storage Capability for the Gas-Blending Facility | 12/31/13 | 07/16/15 | 200,000 | 688,000 |
| Purchase Order | Gas Technology Institute | Hydrogen Quality Sampling Adaptor Repair | 04/02/13 | 04/02/13 | 1,125 | 1,125 |
| Stationary Clean Fuel Technologies | | | | | | |
| 13078 | University of California, Riverside | Steam Hydrogasification Reaction Demonstration to Generate Substitute Natural Gas from Biomass Waste | 03/07/13 | 06/07/14 | 72,916 | 922,130 |
| Outreach & Technology Transfer | | | | | | |
| 12486 | ICF Resources LLC | Technical Assistance with Goods Movement and Zero Emission Transportation Technologies | 09/24/13 | 09/23/15 | 50,000 | 50,000 |
| 13256 | Three Squares Inc. | Develop, Initiate & Implement Clean Vehicle Outreach Project | 01/05/13 | 12/31/13 | 21,500 | 21,500 |
| 13408 | University of California, Irvine | Demonstrate Building Integration of Electric Vehicles, Photovoltaics and Stationary Fuel Cells | 09/30/13 | 09/29/15 | 150,000 | 270,000 |
| Transfer | Transfer from Clean Fuels | Participation in California Natural Gas Vehicle Partnership for Fiscal Years 2012-13 and 2013-14 | 03/01/13 | 03/01/13 | 25,000 | 160,000 |
| Direct Pay | Transportation Research Board | Participation for CY 2013 Membership in Transportation Research Board and Support Minority Student Fellows Program | 01/01/13 | 12/31/13 | 37,500 | 4,000,000 |
| Direct Pay | Various | Cosponsor 15 Conferences, Workshops & Events, plus 1 Membership | Various | Various | 226,164 | 5,246,164 |

Table 3: Supplemental Revenue Grants Received into Clean Fuels Fund (31)

| Revenue Agreement # | Revenue Source | Project Title | Contractor | SCAQMD Contract # | Award Total \$ |
|--|---|---|--|-------------------|--------------------|
| #A00909413 (#13443) | U.S. EPA | Develop & Demonstrate Catenary Class 8 Trucks-1 Electric & 1 CNG Platform | Transportation Power Inc. | #13426 | 500,000 |
| #5660020940/#11722 | Southern California Gas Company (augments U.S. DOE funding to NREL) | Develop, Integrate & Demonstrate Heavy-Duty Natural Gas Engines and Vehicles | National Renewable Energy Laboratory | #13168 | 500,000 |
| #12152 | CEC AB 118 Program | Upgrade CNG Fueling Station | Rainbow Disposal Company Inc. | #12853 | 200,000 |
| #13462 | CEC ARV-10-045 | Install & Upgrade EV Charging Stations (Administer SoCalV Infrastructure Project) | SoCalEV Regional Collaborative Members | #13418-21, et al | 840,750 |
| Table 3 lists revenue <u>recognized</u> by SCAQMD into the Clean Fuels Fund (31) <u>only</u> if the pass-through contract was executed during the reporting CY (2013). | | | | | \$2,040,750 |

Table 4: Summary of Federal & State Funding Awarded between Jan. 1 & Dec. 31, 2013

| Awarding Entity or Program | Award Date | Purpose | Contractors | Award Total \$/Fund |
|--|------------|---|--|--------------------------------|
| U.S. EPA A00909413 | 05/09/13 | Develop & Demonstrate Catenary Class 8 Trucks-1 Electric & 1 CNG Platform (Revenue Agreement #13443 - Executed; Project Officer-J.Impullitti) – Project in progress | Transportation Power Inc. | 500,000/ Clean Fuels Fund |
| CEC | 04/05/13 | Construct One Mile of Catenary System and Develop & Demonstrate Diesel Catenary Hybrid Electric Class 8 Truck (\$1.6M Revenue Agreement #14024 - Executed 08/23/13; \$1.4M supplemental revenue agreement pending; Project Officer - J.Impullitti) – Contract under negotiation | Siemens Industry Inc. | 3,000,000/ Clean Fuels Fund |
| CEC AB 118 Program | 06/07/13 | Refurbish & Upgrade Existing, Publicly Accessible Hydrogen Fueling Stations (Revenue Agreement #13468 - Executed 08/08/13; Project Officer – L.Watkins) – Awards pending | TBD | 6,690,828/ Fund 63 |
| Bay Area AQMD (thru U.S. DOE/ Clean Cities Program) | 09/06/13 | Alternative Fuel Infrastructure Planning (Revenue Agreement #14148 – Executed 01/09/14; Project Officer – P.Kwon) – Contracts pending execution | 5 Contractors | 320,000/ Fund 17 |
| CEC AB 118 Program | 09/06/13 | Installation of DC Fast Charging Network (Revenue Agreement #14051 – Executed 11/11/13; Project Officer – P.Kwon) – Contracts pending execution | CFCI and Three Squares | 300,000/ Clean Fuels Fund |
| CEC | 10/04/13 | Develop, Integrate & Demonstrate Ultra-Low Emission Natural Gas Engines for On-Road Heavy-Duty Vehicles (Revenue Agreement – not yet received; Project Officer – J.Cox) – Contracts pending execution | Cummins Westport Inc. and Cummins Inc. | 4,000,000/ Clean Fuels Fund |
| Southern California Gas Company | 10/04/13 | Develop, Integrate & Demonstrate Ultra-Low Emission Natural Gas Engines for On-Road Heavy-Duty Vehicles (Revenue Agreement #14146 – Pending execution; Project Officer – J.Cox) | Same as above | 1,000,000/ Clean Fuels Fund |
| Table 4 provides a comprehensive summary of revenue <u>awarded</u> to SCAQMD during the reporting CY (2013) if it will be considered part of, or complementary to, the Clean Fuels Program, regardless of whether the pass-through contract has been executed. | | | | \$15,810,828 |

Table 5: Update of Federal & State Funding Awarded between Jan. 1, 2009 & Dec. 31, 2012

| Awarding Entity or Program | Award Date | Purpose | Contractors | Award Total \$ |
|---|-------------------|---|-----------------------------------|--------------------------------|
| U.S. EPA/DERA Program DE 96085601 | 02/03/09 | Retrofit 200 Heavy-Duty Trucks with Diesel Particulate Filters (Revenue Agreement #09320 – Executed 02/18/09; Project Officer – A.Oshinuga) – All trucks retrofitted | 11 Contractors | 1,000,000/ Clean Fuels Fund |
| City of Los Angeles (POLB/POLA) | 03/06/09 | Install LNG Fueling Station at the Ports (Revenue Agreement #09349 – Executed 01/19/10; Project Officer – L.Watkins) – Station in operation | California Cartage Co. | 532,500/ Clean Fuels Fund |
| U.S. EPA DE 83420301 | 04/28/09 | Develop & Demonstrate SCRT® for NO _x and PM Emissions Control (Revenue Agreement #09405 - Executed 06/02/09; Project Officer – J.Cox) – Project complete | Johnson Matthey, Inc. | 900,000/ Clean Fuels Fund |
| CARB (from U.S. EPA/DERA Program) G08-DERA-02 | 05/22/09 | Placement of up to 43 aftertreatment devices (retrofit traps) on public school buses operating on diesel fuel (Revenue Agreement #G-08-DERA-02 – Executed 05/22/09; Project Officer – R.George) – Project complete | 3 School Districts | 898,000/ Fund 33 |
| U.S. EPA/DERA Program (Emerging Technologies) 2A 83442501 2A 83442101 | 08/31/09 | Implement program to optimize and demonstrate selective catalytic regenerating and selective catalytic continuously regenerating technologies on on-road heavy-duty diesel trucks (Revenue Agreements #10064 & #10063 - Executed 10/20/09; Project Officer – J.Cox) - Project complete | Johnson Matthey Inc. | 4,000,000/ Clean Fuels Fund |
| U.S. EPA/DERA Program EM-00T16601 | 09/25/09 | Implement Heavy-Duty Diesel Drayage Truck Replacement Program (Revenue Agreement #10119 – Executed 10/28/09; Project Officer – A.Oshinuga) - Project complete | Various | 7,500,000/ Fund 81 |
| DOE Transportation Electrification Program DE-EE0002549 | 12/14/09 | Develop U.S. manufactured next-generation batteries and electric vehicles and to fully integrate plug-in hybrid electric vehicle systems for 378 medium-duty utility and delivery trucks and shuttle buses (Revenue Agreement #10193 - Executed 03/25/10; Project Officer – J.Cox) – Project in progress | Electric Power Research Institute | 45,443,332/ Fund 50 |
| DOE Clean Cities Program DE-EE0002562 | 12/18/09 | Expansion of an LNG corridor from Ontario to Las Vegas, which would include both vehicles and infrastructure and be implemented in conjunction with the UPS (Revenue Agreement #10467 - Executed 03/04/10; Project Officer – L.Watkins) – Project in progress | 4 Contractors | 5,591,611/ Fund 51 |
| DOE Clean Cities Program DE-EE0002547 | 12/18/09 | Implement a natural gas drayage truck replacement program (Revenue Agreement #10480 - Executed 1/26/10; Project Officer – V.White) – 219 trucks replaced | Various | 9,408,389/ Fund 81 |
| DOE Clean Cities Petroleum Reduction Technologies | 12/31/09 | Purchase of CNG Taxicabs and Shuttle Vans (Revenue Agreement #10739 – Executed 11/12/10; Project Officer – P.Barroca) – Partially complete | 3 Contractors | 500,000/ Clean Fuels Fund |
| CARB AB 118 AQIP Program | 02/05/10 | Purchase of cordless electric lawn mowers (Revenue Agreement #10592 – Executed 2/4/10; Project Officer – S.Singeetham) – Project complete | Neuton and Black & Decker | 816,000/ Fund 27 |

**Table 5: Update of Federal & State Funding Awarded between Jan. 1, 2009 & Dec. 31, 2012
(cont'd)**

| Awarding Entity or Program | Award Date | Purpose | Contractors | Award Total \$/Fund |
|---|-------------------|--|---|--|
| DOE Clean Cities Program DE-EE0002545 | 03/12/10 | Ontario LNG Station Upgrade (Revenue Agreement #10685 - Executed 05/07/10; Project Officer – L.Watkins) – Pass-through contract pending | UPS | 150,000/ Fund 01 |
| U.S. EPA EM 00T34701 | 04/21/10 | Truck Replacement (diesel to diesel and diesel to zero emission), install shorepower to two ships, demonstrate a combined diesel particulate filter and selective catalytic reduction system on two tugboat engines (Revenue Agreement #10707 – Executed 05/06/10; Project Officer – A.Oshinuga) – Projects in progress | 4 Contractors | 3,600,000/ Fund 32 & Clean Fuels Fund (\$1.4M) |
| U.S. EPA DE-83468501 | 06/23/10 | Demonstrate Emerging Technologies Advanced Maritime Emissions Controls (Revenue Agreement #11030 – Executed 07/23/10; Project Officer – R.Carlson) – Project complete | ACTI | 1,500,000/ Fund 17 |
| U.S. EPA DE 00T37701 | 06/30/10 | National Clean Diesel Program – School Bus Replacement (Revenue Agreement #11029 - Executed 07/16/10; Project Officer – R.George) – Deliverables complete0 | 11 School Districts | 1,065,465/ Fund 33 |
| Southern California Gas Company | 07/09/10 | Develop Prototype Natural-Gas-Fired, Fan-Type Central Furnaces with Reduced NOx Emissions (Revenue Agreement #11539 – Executed 12/10/10; Project Officer – A.Baez) – Projects partially complete | 4 Contractors | 447,737/ Fund 27 |
| CEC ARV-09-003 | 09/02/10 | Develop U.S. manufactured next-generation batteries and electric vehicles and to fully integrate plug-in hybrid electric vehicle systems for 378 medium-duty utility and delivery trucks and shuttle buses (Revenue Agreement #11043 - Executed 09/02/10; Project Officer – J.Cox) – Project in progress | Electric Power Research Institute | 5,000,000/ Fund 50 |
| San Joaquin Valley Air Pollution Control District | 10/01/10 | Develop Prototype Natural-Gas-Fired, Fan-Type Central Furnaces with Reduced NOx Emissions (Revenue Agreement #11195 – Executed 10/29/10; Project Officer – A.Baez) – Projects partially complete | 4 Contractors | 50,000/ Fund 27 |
| CEC AB118 Program | 09/10/10 | Alternative and Renewable Fuel and Vehicle Technology Program – Construct & Install 10 NG Fueling Station (Revenue Agreement #12152 –Executed 11/08/11; Project Officer – L.Watkins) – Partially complete | 6-7 Contractors | 2,600,000/ Clean Fuels Fund |
| CEC AB118 Program | 09/10/10 | Alternative and Renewable Fuel and Vehicle Technology Program – Construct & Install One NG Fueling Station (Revenue Agreement #12286 –Executed 02/22/12; Project Officer – L.Watkins) – Pass-through contract pending | UPS | 300,000/ Clean Fuels Fund |
| CEC ARV-09-002 | 10/07/10 | Implement LNG Drayage Truck Replacement Program (Revenue Agreement #11040 - Executed 10/07/10); Project Officer – V.White) – 132 trucks replaced | Various | 5,142,000/ Fund 81 |

**Table 5: Update of Federal & State Funding Awarded between Jan. 1, 2009 & Dec. 31, 2012
(cont'd)**

| Awarding Entity or Program | Award Date | Purpose | Contractors | Award Total \$/Fund |
|--|-------------------|--|--|---------------------------------|
| CARB AB 118 AQIP Program G10-AQIP-09 | 04/05/11 | Purchase Cordless Electric Lawnmowers (Revenue Agreement #11595 – Executed 04/05/11; Project Officer – S.Singeetham) – Projects complete | 4 Contractors | 494,314/ Fund 27 |
| U.S. EPA Clean Air Technology Initiative Program A 00909411 | 12/15/10 | Demonstrate Battery Electric Heavy-Duty Trucks & Install Air Filtration Systems at Schools or Community Centers (Revenue Agreement #11530 – Executed 01/11/11; Project Officers – J.Impullitti & P.Kwon) – Projects partially complete | TransPower and IQAir North America | 400,000/ Fund 17 |
| Southern California Gas Company | 04/22/11 | Natural Gas-Powered Vehicle Training and Safety and Fuel Cylinder Inspection Program (Revenue Agreement #11617 – Executed 6/23/11; Project Officer – P.Barroca) – Projects in progress | CSA America Inc. and San Diego Community College on behalf of ATTE | 67,100/ Clean Fuels Fund |
| U.S. EPA Targeted Air Shed Grant EM-83493501 | 07/14/11 | Yard Equipment Exchange Program (Residential and Commercial); and Boiler and Process Heater Efficiency Upgrades to Demonstrate Reductions in Ozone and PM2.5 Air Pollution in LA-San Bernardino Nonattainment Areas (Revenue Agreement #11598 – Executed 3/25/11; Project Officer – S.Singeetham) - Projects partially complete | Various | 1,270,000/ Fund 17 |
| CEC ARV-10-045 | 05/20/11 | Install & Upgrade EV Charging Infrastructure Stations (Administer the SoCalEV Infrastructure Project to Install Up to 315 EV Chargers throughout Southern California (Revenue Agreement #12295 – Executed 03/22/12; Project Officer – P.Kwon) – Projects in progress | SoCalEV Regional Collaborative Members | 840,750/ Clean Fuels Fund |
| CARB AB 118 AQIP G10-AQIP-10 | 08/10/11 | Demonstrate Combined DPF and SCR Technologies on Marine Vessels (Revenue Agreement #12022 – Executed 08/10/11; Project Officer – R.Carlson) – Project in progress | Hug Engineering | 439,000/ Fund 27 |
| U.S. DOE Clean Cities Program E-EE0005588 | 09/26/11 | Plug-In Electric Vehicle Infrastructure Planning (Revenue Agreement #12167 – Executed 11/12/11; Project Officer – P.Kwon) – Projects complete | 7 Contractors | 1,000,000/ Fund 60 |
| Southern California Gas Company 5660020940 (augmenting U.S.DOE funding to NREL) | 06/24/11 | Develop, Integrate & Demonstrate Heavy-Duty Natural Gas Engines and Vehicles (Revenue Agreement #11722 – Executed 06/24/11; Project Officer – A.Oshinuga) – Project in progress | National Renewable Energy Laboratory | 500,000/ Clean Fuels Fund |
| California Department of Transportation 07-6373R | 06/15/11 | Replace Existing Heavy-Duty Diesel Trucks with New Heavy-Duty Natural Gas Trucks (Revenue Agreement #11458 – Executed 07/12/11; Project Officer – A.Oshinuga)- Projects in progress | Various | 1,799,612/ Fund 81 |

**Table 5: Update of Federal & State Funding Awarded between Jan. 1, 2009 & Dec. 31, 2012
(cont'd)**

| Awarding Entity or Program | Award Date | Purpose | Contractors | Award Total \$/Fund |
|---|------------------------------------|--|-------------------------------------|------------------------------|
| Ports of Los Angeles & Long Beach | 10/07/11 | In-Use Emissions Testing & Demonstration of Retrofit Technology of On-Road Heavy-Duty Engines (Revenue Agreement #12877 – Executed 07/20/12; Project Officer – | WVU and UCR/CE-CERT | 281,006/ Clean Fuels Fund |
| DOE DE-FC26-08NT06812 | Orig: 9/30/08 Current: 07/01/12 | Plug-In Hybrid Electric Urban Delivery Truck Technology Demonstration (Revenue Agreement #09160 – Executed 10/22/08; Project Officer – J.Cox) – Project in | Volvo Technology of America, Inc. | 984,000/ Fund 61 |
| CEC AB 118 Program | 07/25/12 | Construct CNG Fueling Station I in Murrietta (Revenue Agreement # 13034- Executed 09/09/12; Project Officer – L.Watkins) – Pass-through contract pending | Southern California Gas Company | 217,000/ Clean Fuels Fund |
| U.S. EPA/DERA DE-00T96201-1 | 09/11/12 | Replace 50 Medium Heavy-Duty Diesel Trucks with New Full Electric Battery-Powered Medium Heavy-Duty Vehicles (Revenue Agreement #13153 – Executed 10/30/12; Project Officer – B.Choe) – Pass-through contract pending | Electric Vehicle International Inc. | 1,045,993/ Fund 17 |
| DOE Vehicle Technologies Program DE-EE0005961 | 09/28/12 | Develop, Demonstrate and Deploy at least 13 Class 8 Battery Electric Heavy-Duty Trucks and Fuel Cell Hybrid Electric Trucks (Revenue Agreement #13082 – Executed 10/30/12; Project Officer – B.Choe) – Project in progress | 5 Contractors | 4,169,000/ Fund 61 |
| CARB AB 118 AQIP Program | Orig:7/8/11 Current: 12/07/12 | Demonstrate the commercial use of cordless zero-emission lawn and garden equipment (Revenue Agreement #12018 – Executed 8/10/11; Project Officer – S.Singeetham) – | Mean Green | 51,667/ Fund 27 |
| <p><i>Table 5 provides a comprehensive summary of revenue awarded to SCAQMD during CYs 2009 through 2012, if it is part of, or complementary to, the Clean Fuels Program, regardless of whether the pass-through contract has been executed and regardless of which special fund the revenue was recognized into.</i></p> | | | | \$110,876,746 |

Project Summaries by Core Technologies

The following represents summaries of the contracts, projects and studies executed or amended with additional dollars in 2013. They are listed in the order found in Table 2 by category and contract number. The summaries provide the project title, contractors and subcontractors, SCAQMD cost-share, co-sponsors and their respective contributions, contract term and a description of the projects as required by H&SC Section 40448.5.1(d).

Infrastructure and Deployment

12853: Upgrade CNG Fueling Station

| | | |
|--|--------------------------------|------------|
| Contractor: Rainbow Disposal Company, Inc. | SCAQMD Cost-Share | \$ 200,000 |
| | Cosponsor: | |
| | Rainbow Disposal Company, Inc. | 200,000 |
| Term: 03/08/13 – 12/31/18 | Total Cost | \$ 400,000 |

Rainbow Disposal has operated a public access CNG fueling station in Huntington Beach for many years. As the number of CNG vehicles has grown so has the utilization of the station. The ability to adequately service all of the customers from that area has diminished so that there are now waiting lines of up to 30 minutes. To upgrade Rainbow Disposal's existing CNG station, the SCAQMD applied for infrastructure funding through CEC's AB 118 Program and was awarded \$200,000, which was recognized into the Clean Fuels Fund, as noted in the incoming revenue table (Table 3). The upgrade includes the addition of a second, larger compressor and dispenser in order to meet the demand of Rainbow Disposal's growing natural gas fleet.

13401: Demonstrate Natural Gas-Powered Parking Lot Sweeper Vehicles

| | | |
|------------------------------------|------------------------|------------|
| Contractor: Nite-Hawk Sweepers LLC | SCAQMD Cost-Share | \$ 90,000 |
| | Cosponsors: | |
| | Nite-Hawk Sweepers LLC | 42,000 |
| | Go Natural CNG | 60,000 |
| | ProSales | 3,500 |
| | Haaker Equipment | 3,500 |
| | Isuzu | 1,000 |
| Term: 08/28/13 – 12/31/15 | Total Cost | \$ 200,000 |

Parking lot sweeper vehicles are typically classified as medium-duty vehicles (less than 14,000-lbs gross vehicle weight rating or GVWR), and although many parking lot sweepers provide service to public entities, their weight classification and their vocation (non-street sweeping activities), exempts them from SCAQMD Fleet Rule 1186.1 and Rule 1186 (combined, these two Rules ensure that the cleanest vehicles are being used in the SCAQMD for street sweeping activities). The number of parking lot sweepers operating in this region is estimated between 500 to 700 and can accrue as many as 60,000 miles annually, representing a significant amount of emissions in this region. Parking lot sweeper vehicles range from a converted pick-up truck to

more sophisticated chassis conversions and operate on conventional fuel such as gasoline or diesel. This project is to demonstrate a CNG-powered prototype parking lot sweeper that will be built by Nite-Hawk Sweepers LLC based in Seattle, WA, using an Isuzu NPR-HD chassis, powered by a 6.0L GM spark-ignited engine that will be converted to dedicated CNG using a conversion system developed by Go Natural CNG based in Utah that will operate under a CARB Experimental Permit. Demonstration is expected to commence in May 2014. The vehicle will be demonstrated to both public and private parties over a two-year period. The project is expected to result in CARB certification for converting this vehicle to operate on dedicated natural gas as well as commercial availability of a dedicated natural gas powered parking lot sweeper vehicle.

Fuels/Emission Studies

13451: Perform Passenger Vehicle Tire Efficiency Study

| | | |
|------------------------------|-------------------|-----------|
| Contractor: Energy Solutions | SCAQMD Cost-Share | \$ 10,000 |
| | Cosponsor: | |
| | Energy Solutions | 6,000 |
| Term: 06/28/13 – 12/27/13 | Total Cost | \$ 16,000 |

This study was to identify how low rolling resistance passenger vehicle replacement tires could provide a significant opportunity to reduce air pollutants and carbon dioxide while saving consumers fuel and money. Across the United States, passenger vehicle tires are being replaced with tires less efficient than those originally installed by the factory. This is, in part, likely due to passenger vehicle tires not having a standardized labeling system that allows consumers to easily identify lower rolling resistance tires, the higher upfront cost of fuel efficient tires and lack of outreach and education on the longer term payback of using more efficient tires. This study would review the air quality and greenhouse gas benefits of increasing the sales of fuel efficient tires. A 4% increase in overall efficiency of the vehicle was used when fuel efficient tires were evaluated over the average replacement tire. Using this efficiency assumption, and applying it to passenger vehicles in the Basin for model year 2010 and older needing replacement tires, the study projected a reduction of 1,500 tons of ozone precursors (612 VOC, 715 NO_x) and a CO₂ reduction of 1.6 million tons. The study also reviewed the cost benefits to consumers and emissions from implementing an incentive program buy down program for purchasing higher efficiency tires.

Emission Control Technologies

13407: Demonstrate Diesel Particulate Filter Technology on Two Diesel School Buses

| | | |
|--|--|-----------|
| Contractor: Chaffey Joint Union High School District | SCAQMD Cost-Share | \$ 30,000 |
| | Cosponsor | |
| | Chaffey Joint Union High School District | 15,000 |
| Term: 05/28/13 – 03/31/14 | Total Cost: | \$ 45,000 |

Chaffey Joint Union High School District (Chaffey) previously received funding to retrofit diesel school buses with Cleaire Horizon diesel particulate filters (DPFs). Within a year of installation, the buses equipped with hydraulic electronic unit injector (HEUI) engines began to experience

higher rates of engine-related problems than normal including fuel injector failures, oil leaks, turbocharger failures and loss of power. These engine problems were attributed to high back pressure caused by plugged Horizon DPFs. The objective of this project was to evaluate two alternate DPF technologies and determine if one would be better suited to the Chaffey buses and provide better bus operation and less maintenance.

Electric/Hybrid Technologies & Infrastructure

11615: Develop & Demonstrate Up to Four Heavy-Duty Hydraulic Hybrid Vehicles

| | | |
|-----------------------------|------------------------------|--------------|
| Contractor: Parker Hannifin | SCAQMD Cost-Share | \$ 250,000 |
| | Cosponsors: | |
| | California Energy Commission | 750,000 |
| | Parker Hannifin | 354,000 |
| | Coca-Cola Company | 515,000 |
| | Freightliner | 131,000 |
| Term: 01/18/13 – 12/31/14 | Total Cost | \$ 2,000,000 |

Parker Hannifin proposes to partner with Coca-Cola, Daimler Trucks North America, Inc., Freightliner Truck Division, Cummins, Inc. and the FEV Group to design, integrate, rollout and field test up to four hybrid hydraulic beverage delivery tractors used by Coca-Cola Enterprises on urban delivery routes within the South Coast Air Basin. The stop-and-go driving associated with urban delivery routes will allow a hydraulic hybrid-equipped vehicle to capture a significant amount of braking energy that would have otherwise been wasted as heat through the vehicles friction brakes. The Parker Hannifin hydraulic hybrid drive system is designed to recover brake energy and store it for later use using hydraulic accumulators instead of chemical energy storage systems used in hybrid electric systems today. Upon braking, the hydraulic hybrid system allows vehicle inertia to be converted and stored as high pressure energy within hydraulic accumulators. Accumulated energy is then made available for use when the vehicle is next accelerated, to supplement or displace the power that would otherwise be supplied by the diesel engine.

13058: Develop Microturbine Series Hybrid System for Class 7 Heavy-Duty Vehicle Applications

| | | |
|--|-----------------------------|--------------|
| Contractor: Capstone Turbine Corporation | SCAQMD Cost-Share | \$ 360,000 |
| | Cosponsors: | |
| | Capstone, Kenworth & Costco | 850,000 |
| Term: 08/23/13 – 11/30/14 | Total Cost | \$ 1,210,000 |

Kenworth and Capstone Turbine Corporation (Capstone) are working to advance the development of their microturbine generator (MTG) hybrid on a Class 7 refrigeration truck chassis and demonstrate the potential benefits of the drive system architecture in a real-world application. The proposed vehicle will utilize a series hybrid electric drive system that will afford it up to 10 miles of all-electric driving range. After the vehicle breaches the battery's lower state of charge threshold, an on-board MTG will be utilized to provide extended range driving beyond the initial 10 miles. The vehicle is expected to be deployed within Costco's fleet to evaluate its operational and performance benefits.

13149: Develop South Coast PEV Readiness Plan

| | | |
|--|-------------------|-----------|
| Contractor: University of California, Los Angeles | SCAQMD Cost-Share | \$ 32,000 |
| | Cosponsor: | |
| | SCAG | \$31,500 |
| Term: 01/18/13 – 06/30/14 | Total Cost | \$ 63,500 |

As part of a \$1,000,000 grant received by SCAQMD from the DOE Clean Cities program for PEV readiness, \$200,000 went towards funding the UCLA Luskin Center to create a South Coast PEV Readiness Plan. The UCLA Luskin Center was engaged by SCAG to develop the South Coast PEV Readiness Plan through a competitive RFP process. The UCLA Luskin Center has significant expertise on PEV readiness issues and has authored several policy documents, including one on the PEV market in Los Angeles and addressing challenges to installing infrastructure in multi-unit dwellings. The Southern California PEV Readiness Plan was the winner of the 2013 Planning Excellence Award by the Los Angeles section of the American Planning Association. This project is to develop additional PEV readiness elements for the South Coast PEV Readiness Plan for the DOE Clean Cities grant, including an analysis of barriers of required and optional PEV readiness elements such as permitting and inspection, training and education, workplace and fleet charging, and multi-unit dwelling charging. It will also provide a much needed analysis of two challenge areas identified by the California PEV Collaborative in multi-unit dwelling and workplace charging, for which two new working groups have been created. Using funds from a U.S. DOE grant, SCAG cosponsored the additional elements, along with the SCAQMD.

13404: Lease Two Honda Fit Electric Vehicles for Three Years

| | | |
|--|-------------------|-----------|
| Contractor: Penske Honda of Ontario | SCAQMD Cost-Share | \$ 31,307 |
| Term: 05/02/13 – 05/01/16 | Total Cost | \$ 31,307 |

The SCAQMD leased two Honda Fit EVs from Penske Honda due to limited supply in stock. Honda plans to lease the Fit EV to approximately 1,100 customers over a two-year period to residents of California, Oregon, New York, New Jersey, Connecticut, Massachusetts, Maryland and Rhode Island. The AC induction motor provides 123 hp with a top speed of 90 mph, and there are three drive modes - normal, econ and sport. The U.S. EPA estimated range is 82 miles using a 20 kWh, air-cooled Li-Ion battery pack. The Fit EV is 700 pounds heavier than the gasoline version, and cargo capacity is reduced slightly from 57 to 50 cubic feet in a 5-passenger hatchback.

13410: Lease Three 2013 Chevrolet Volt Extended-Range Electric Vehicles for Three Years

| | | |
|---|-------------------|-----------|
| Contractor: Selman Chevrolet Company | SCAQMD Cost-Share | \$ 41,084 |
| Term: 04/03/13 – 04/02/16 | Total Cost | \$ 41,084 |

The SCAQMD is leasing three additional 2013 Chevrolet Volt extended-range electric vehicles (also known as plug-in hybrid electric vehicles or PHEVs) to add to its demonstration fleet of

advanced technology vehicles, which are operated to increase public awareness of clean vehicle technologies and for display at public outreach events. PHEVs are vehicles with an all-electric, zero-emission range, followed by an efficient, gasoline-burning hybrid mode. The 2013 Volt has a zero-emission range of 38 miles, which can meet the needs of most trips so that the Volt can operate for extended periods of time without starting the engine. Upon depleting the zero-emission mode, the gasoline-burning “range extending” hybrid mode would allow drivers to take longer trips. Previously, SCAQMD leased two 2013 Chevy Volts for \$31,373, making the Chevy Volt one of the most cost-effective PEVs.

Variou s: Install & Upgrade EV Charging Infrastructure (Administer SoCalEV Infrastructure Project)

| | | |
|---------------------------|-------------------|------------|
| Contractor: Various | SCAQMD Cost-Share | \$ 840,750 |
| Term: 01/01/13 – 06/30/15 | Total Cost | \$ 840,750 |

State, federal and local funds are currently being invested to support battery EV, plug-in hybrid EV and charging infrastructure. And while Southern California has an established network of public charging for EVs, the infrastructure is mostly obsolete. Consequently, in 2010, on behalf of the Southern California Electric Vehicle (SoCalEV) Regional Collaborative, the LADWP applied for and was awarded \$840,750 by the CEC to install public EV infrastructure at key Southern California locations. LADWP, however, asked the SCAQMD to administer the project. The funds were recognized into the Clean Fuels Fund, as noted in the incoming revenue table (Table 3), and in 2013 the SCAQMD executed the first half dozen of up to 30 agreements with members of the SoCalEV Regional Collaborative to install as well as upgrade existing public EV charging infrastructure at key Southern California locations. Data will also be collected on charger utilization, charging use patterns, operating costs, electricity used and real world electric range of EVs.

13426: Develop & Demonstrate Catenary Class 8 Trucks (1 Electric & 1 CNG Platform)

| | | |
|--|--------------------------------------|--------------|
| Contractor: Transportation Power, Inc. | SCAQMD Cost-Share | \$ 2,617,887 |
| | Cosponsor: | |
| | Transportation Power, Inc. (in-kind) | 564,908 |
| Term: 06/07/13 – 06/06/16 | Total Cost | \$ 3,182,795 |

Transportation Power, Inc. (TransPower) has contracted to deliver two trucks equipped with overhead catenary accessibility. The first truck is an existing vehicle that utilizes a battery electric drive system and will be converted to operate on the catenary system. The second truck will be designed and developed as a purpose built CNG-hybrid electric truck to incorporate TransPower’s electric drive system on a major OEM chassis. TransPower will integrate pantographs and associated components into both vehicles. TransPower will perform design, development and testing of new components that enable trucks using their electric drive architecture to acquire and convert power from overhead catenary lines (similar to those used by metro rail lines). The U.S. EPA also supported this project in the amount of \$500,000, with their pass-through funds recognized into the Clean Fuels Fund, as noted in the incoming revenue table (Table 3). The contract with TransPower is part of a larger project being undertaken by the

SCAQMD, which will include development and demonstration of additional vehicles and construction of one mile of a catenary system along Alameda to develop and demonstrate a catenary zero emissions goods movement system.

13429: Lease One Toyota RAV4 Electric Vehicle for Three Years

| | | |
|---------------------------|-------------------|-----------|
| Contractor: Longo Toyota | SCAQMD Cost-Share | \$ 19,618 |
| Term: 04/19/13 – 04/18/16 | Total Cost | \$ 19,618 |

The SCAQMD leased one Toyota Rav4 EV from Longo Toyota which provided the lowest of three bidders. Toyota plans to produce 2,500 Rav4 EVs for model years 2012, 2013 and 2014, using 41.8 kWh LiIon battery packs with 10 kW onboard chargers provided by Tesla Motors, integrated in Fremont, California. The AC induction motor provides 154 hp at 2,800 rpm. The U.S. EPA estimated range is 103 miles for this EV. There is also an extended charge mode that provides about a 120 mile range and a sport mode that increases torque from 218 lb.-ft to 273 lb.-ft. The Rav4 EV is 470 pounds heavier than the gasoline version but no interior space is lost. It seats 5 adults or provides 73 cubic feet of cargo volume behind the front seat with fold flat rear seats.

13439: MOU for Catenary Zero Emission Goods Movement Project

| | | |
|----------------------------|-------------------|------|
| Contractor: City of Carson | SCAQMD Cost-Share | \$ 0 |
| Term: 10/01/13 – 09/30/16 | Total Cost | \$ 0 |

Development and demonstration of zero emissions technologies for goods movement is one of SCAQMD's top priorities. In April 2013 the Board approved a project to develop and demonstrate a catenary zero emissions goods movement system. The project includes construction of one mile of catenary system and development and demonstration of diesel and CNG catenary hybrid electric class 8 trucks and integration of a catenary pantograph system on an existing battery electric class 8 truck. The one mile of catenary system will be constructed along Alameda Street from E. Lomita Blvd to the Dominguez channel in Carson, in coordination with the Ports of Los Angeles and Long Beach. This no-cost MOU between the City of Carson and SCAQMD facilitates the City of Carson's participation and assistance with permitting and the CEQA process.

Purchase Order: Install Electric Vehicle Chargers

| | | |
|---------------------------|-------------------|-----------|
| Contractor: ATVLS, Inc. | SCAQMD Cost-Share | \$ 19,985 |
| Term: 02/13/13 – 02/13/13 | Total Cost | \$ 19,985 |

This project provided funds for the demonstration of Level 2 electric vehicle charging infrastructure from several manufacturers including Coulomb Technologies, ECOtality and Clipper Creek. Two chargers were installed at the Coachella Valley Association of Governments' facility in Palm Desert as part of SCAQMD's Fleet Demonstration Program.

Purchase Order: Install Electric Vehicle Chargers

| | | |
|---|-------------------|-----------|
| Contractor: Clean Fuel Connection, Inc. | SCAQMD Cost-Share | \$ 17,389 |
| Term: 01/29/13 – 02/20/13 | Total Cost | \$ 17,389 |

This project provided funds for the demonstration of Level 2 electric vehicle charging infrastructure from several manufacturers including Coulomb Technologies, ECOtality and Clipper Creek. Charging infrastructure was placed at two SCAQMD Board Member residences as part of SCAQMD's Fleet Demonstration Program.

Engine Systems

13168: Develop, Integrate & Demonstrate Heavy-Duty Natural Gas Engines

| | | |
|--|-------------------|--------------|
| Contractor: National Renewable Energy Laboratory | SCAQMD Cost-Share | \$ 1,300,000 |
| Term: 05/22/13 – 12/31/15 | Total Cost | \$ 1,300,000 |

The SCAQMD Board adopted a series of clean fuel fleet rules to reduce mobile source emissions within the SCAQMD's regulatory jurisdiction. The fleet rules require certain public entities and special districts, such as air, water, sanitation and school districts, with fifteen or more heavy-duty vehicles to acquire CARB-certified alternative-fueled heavy-duty vehicles when adding new vehicles or forming a new fleet. These rules have helped to advance natural gas engine technology and to expand the natural gas engine market into a wider range of heavy-duty vehicle applications. Specifically, on-road natural gas engines are now being used on a limited basis as an alternative to diesel engines in transit, refuse and goods movement applications. While the number of natural gas engines has grown, there is still a need to develop natural gas engines in the 11- to 14-liter range to fill the wide array of fleet applications currently served solely by diesel engines. As such, the SCAQMD has been working with NREL, the CEC and Southern California Gas Company (SoCalGas) to accelerate the development, integration and demonstration of natural gas engines ranging in sizes from 11 to 14 liters suitable for transit, refuse and goods movement applications. In 2011, the Board awarded a contract to U.S. DOE's NREL for \$3,055,000 to develop, integrate and demonstrate three different heavy-duty natural gas engines. The three engines will be used in refuse, transit and Class 8 heavy-duty truck applications and comply with the U.S. EPA 2010 heavy-duty emissions standards of 0.01 g/bhp-hr PM and 0.2 g/bhp-hr NO_x. The first project is with Cummins Westport to develop and optimize a spark-ignited 11.9-liter CNG engine suitable for refuse and Class 8 application, and has been fully executed under a Cooperative Research and Development Agreement (CRADA) between SCAQMD and NREL. SoCalGas supported this first project with Cummins Westport in the amount of \$500,000, with their pass-through funds recognized into the Clean Fuels Fund, as noted in the incoming revenue table (Table 3). The CRADA will be modified again at a later date to include the remaining two projects.

Mobile Fuel Cell Technologies

10501: Lease One Clarity Fuel Cell Vehicle for Three Years

| | | |
|--|-------------------|----------|
| Contractor: American Honda Motor Company, Inc. | SCAQMD Cost-Share | \$ 5,232 |
| Term: 01/21/10 – 09/11/13 | Total Cost | \$ 5,232 |

The Executive Officer approved a short-term extension of the lease contract with Honda for the 2009 Honda Clarity FCX. The Clarity has been in the SCAQMD demonstration fleet and is primarily used at outreach events and public meetings to demonstrate state-of-the-art hydrogen fuel cell vehicles.

13155: Lease Two F-Cell Fuel Cell Vehicles for Two Years

| | | |
|--|-------------------|-----------|
| Contractor: Fletcher Jones Motor Cars Inc. (Mercedes-Benz) | SCAQMD Cost-Share | \$ 30,397 |
| Term: 02/08/13 – 02/08/15 | Total Cost | \$ 30,397 |

The SCAQMD leased two Mercedes F-Cell fuel cell vehicles from Fletcher Jones MotorCars which is conveniently located near the UC Irvine hydrogen fueling station. SCAQMD previously demonstrated Mercedes A-class (smaller) F-Cell vehicles from 2005 to 2009. Mercedes plans to demonstrate about 200 F-Cells as part of this pilot program in the US and Europe. This new B-Class F-Cell provides 136 hp and a top speed of 106 mph. Range is improved to about 200 miles compared to the previous A-Class version when refueling at a higher pressure of 700 bar. The vehicle will be placed into our alternative fuel vehicle fleet to demonstrate new clean fuel vehicles to public and private organizations to promote zero- and low-emission technologies.

14054: Participate in California Fuel Cell Partnership for Calendar Year 2013 and Provide Support for Regional Coordinator

| | | |
|-------------------------------------|---|--------------|
| Contractor: Bevilacqua-Knight, Inc. | SCAQMD Cost-Share | \$ 137,800 |
| | Cosponsors: | |
| | 8 automakers; 6 government agencies; 1 fuel cell provider; and 19 associate members | 1,539,000 |
| Term: 01/01/13 – 12/31/13 | Total Cost | \$ 1,676,800 |

The SCAQMD has been a member of the California Fuel Cell Partnership (CaFCP) since 2000. The CaFCP and its members are demonstrating fuel cell passenger cars and transit buses with associated hydrogen fueling infrastructure in California. Since the CaFCP is a voluntary collaboration, each participant contracts with Bevilacqua-Knight, Inc. (BKI) for their portion of CaFCP administration. For Calendar Year 2013 the SCAQMD contributed \$87,800 for its membership participation and up to \$50,000, along with office space at SCAQMD Headquarters, to provide support for the CaFCP Regional Coordinator.

13059: No-Cost Lease of Fuel Cell Vehicle for Two-Years

| | | |
|---|-------------------|------|
| Contractor: Hyundai America Technical Center Inc. | SCAQMD Cost-Share | \$ 0 |
| Term: 12/13/13 – 12/12/15 | Total Cost | \$ 0 |

SCAQMD has been working with Hyundai America Technical Center Inc. to become a partner in their fuel cell vehicle demonstration program. In 2013 Hyundai approached the SCAQMD and requested its participation in the on-road testing of their new fuel cell electric vehicle. The on-road testing program is being funded by a grant from the U.S. DOE. Hyundai provides fuel cell vehicles in-kind as their cost-share to secure U.S. DOE funding. This no-cost lease with Hyundai will allow the SCAQMD to participate in the development of this technology and demonstrate its effectiveness. The vehicle will be placed into our alternative fuel vehicle fleet to demonstrate new clean fuel vehicles to public and private organizations to promote low-emission technologies.

Hydrogen Technologies & Infrastructure

10061: Maintenance & Data Management for the SCAQMD Hydrogen Fueling Station

| | | |
|-------------------------------------|-------------------|------------|
| Contractor: Hydrogenics Corporation | SCAQMD Cost-Share | \$ 100,000 |
| Term: 10/30/09 – 01/31/15 | Total Cost | \$ 100,000 |

The SCAQMD, in partnership with Hydrogenics Corporation, installed a hydrogen generation and fueling station at SCAQMD Headquarters. This system uses electrolysis of water to produce the hydrogen and includes the capability to produce backup electrical power using a hydrogen-powered internal combustion engine. This system has been used extensively by the SCAQMD hydrogen-powered vehicle fleet and other hydrogen vehicles for other demonstration programs throughout Southern California. The hydrogen fuel quality has been tested and shown to meet the needs of fuel cell vehicle manufacturers and of the SCAQMD. SCAQMD has become a vital location as part of the California Hydrogen Highway network. In order to continue maintenance and data management of the existing SCAQMD hydrogen station, an amendment of the contract with Hydrogenics Corporation was required. This contract extends beyond the original scope of the project and will ensure the station is maintained while plans are made for the station's upgrade.

11150: Maintain & Operate City of Burbank Hydrogen Fueling Station

| | | |
|-------------------------------------|-------------------|------------|
| Contractor: Hydrogen Frontier, Inc. | SCAQMD Cost-Share | \$ 275,000 |
| Term: 11/24/10 – 01/23/16 | Total Cost | \$ 275,000 |

The City of Burbank hydrogen fueling station was one of the original stations under the Five Cities Hydrogen Program. Pursuant to a DOE Program, the original electrolyzer station was removed and a new steam methane reformer (SMR) based station was installed. When the DOE project was completed, the SCAQMD in partnership with the CARB and NREL funded the ongoing operation of the station. The station has now become an important connector station for all FCVs in Southern California and is now fueling up to 60 kg per day. This amendment provides funding to continue operation and maintenance as well as pay for increased costs associated with utility services (electricity and natural gas) for this station. This contract extends beyond the original scope of the project and will ensure that the station is maintained and will meet the increased demand for hydrogen fuel.

13259: Hydrogen Station Operation & Maintenance for Five Cities Hydrogen Program

| | | |
|--|-------------------|------------|
| Contractor: Air Products and Chemicals, Inc. | SCAQMD Cost-Share | \$ 300,000 |
| Term: 03/26/13 – 09/25/14 | Total Cost | \$ 300,000 |

Air Products and Chemicals, Inc. (APCI) designed and constructed five hydrogen fueling stations under the Five Cities Hydrogen Program, which included three electrolyzers and two mobile fuelers. APCI has provided operation, repair and general maintenance services for the stations since the program began. This contract is to continue ongoing maintenance and operation including equipment repair or replacement for another two years for electrolyzer stations located

in the cities of Santa Monica and Riverside plus a mobile fueler in the City of Santa Ana. The Ontario Station was dismantled and shut down and operation and maintenance of the City of Burbank station was taken over by Hydrogen Frontier, Inc.

13400: Develop Hydrogen Network Investment Plan

| | | |
|-------------------------------------|----------------------------------|------------|
| Contractor: Energy Independence Now | SCAQMD Cost-Share | \$ 50,000 |
| | Cosponsors: | |
| | Energy Independence Now | 15,000 |
| | California Fuel Cell Partnership | 25,000 |
| | Daimler | 15,000 |
| | Toyota | 25,000 |
| Term: 04/05/13 – 01/04/15 | Total Cost | \$ 130,000 |

California does not have a clear plan to open and maintain the early commercial hydrogen fueling infrastructure needed to launch the fuel cell electric vehicle (FCEV) market. The CaFCP Roadmap clearly establishes the need for 68 hydrogen stations by the beginning of 2016 to reach California's early market potential for FCEVs. It does not, however, define how to get there. Initially, the success of the Roadmap completely depended upon the CEC's oversubscribed AB 118 Program, which even using optimistic assumptions, would provide for only about half of these stations by 2016. While Assembly Bill 8, which was chaptered in September 2013, dedicates additional funding to build up to 100 hydrogen stations, the Roadmap target can only be achieved with a clear plan on how the additional stations will be financed, including evaluating the evolving market dynamics and potential incentive options. To develop and outline a methodology on how to move forward, Energy Independence Now, in conjunction with the CaFCP and its partners, will develop a Hydrogen Network Investment Plan (HNIP) that will include a pathway for Market Assurance Grant (MAG) implementation, operating guidelines and the next steps for implementation of a proposed funding mechanism to administer these grants, ultimately leading to complement CEC grants.

14067: Develop Hydrogen Storage Capability for the Gas-Blending Facility

| | | |
|--|--------------------------------|------------|
| Contractor: University of California, Irvine | SCAQMD Cost-Share | \$ 200,000 |
| | Cosponsors: | |
| | U.S. Department of Energy | 134,000 |
| | California Energy Commission | 241,000 |
| | NFCRC | 53,000 |
| | Air Products & Chemicals, Inc. | 60,000 |
| Term: 12/31/13 – 07/16/15 | Total Cost | \$ 688,000 |

Hydrogen fuel cell vehicles have zero emissions, and hydrogen blended with other fuels, such as natural gas, has shown the potential to reduce emissions in mobile and stationary combustion sources. Hydrogen and natural gas blends may provide a near-term opportunity to displace petroleum-based fuels while reducing emissions. Testing of distributed generation devices,

including microturbines and fuel cells, on different blends of hydrogen is a focus of the U.S. DOE and CEC. This project will develop hydrogen storage capability for a gas blending facility at UCI's Advanced Power and Energy Program. It will enable the study of hydrogen and hydrogen/natural gas blends for distributed generation applications. The capacity will be 100,000 cu.ft. of compressed hydrogen stored at 2,200 psi. This capacity will allow the continuous operation of 30 kW of distributed generation devices given a normal hydrogen delivery schedule and intermittent operation of a 250 kW distributed generation on an aggressive delivery schedule.

Purchase Order: Hydrogen Quality Sampling Adaptor Repair

| | | |
|--------------------------------------|-------------------|----------|
| Contractor: Gas Technology Institute | SCAQMD Cost-Share | \$ 1,125 |
| Term: 04/02/13 – 04/02/13 | Total Cost | \$ 1,125 |

The SCAQMD performs hydrogen quality sampling at demonstration hydrogen stations demonstrated in its jurisdiction including the one maintained at SCAQMD Headquarters. The apparatus used to perform the sampling began leaking, creating a safety hazard and contamination concern. A purchase order was issued for, and payment made to, GTI to repair the sampling apparatus.

Stationary Clean Fuel Technologies

13078: Steam Hydrogasification Reaction Demonstration to Generate Substitute Natural Gas from Biomass Waste

| | | |
|---|------------------------------|------------|
| Contractor: University of California, Riverside | SCAQMD Cost-Share | \$ 72,916 |
| | Cosponsors: | |
| | California Energy Commission | 649,214 |
| | Synergy, Inc. (in-kind) | 200,000 |
| Term: 03/07/13 – 06/07/14 | Total Cost | \$ 922,130 |

Utilization of renewable energy sources, including biomass waste, has the potential to make a significant contribution in providing sustainable power and transportation fuel for the future. Steam Hydrogasification Reaction (SHR) is a thermo-chemical process, developed by the University of California, Riverside, to convert carbonaceous matter in biomass waste into methane in a hydrogen rich environment. The SHR process is capable of generating product gas with 90% or higher methane content in a cost effective and efficient manner. It is also capable of handling wet feedstocks without drying, providing an attractive and viable solution to utilize wet sludge and green waste in lieu of landfill disposal. The objectives of this project are to demonstrate the SHR technology in a Process Demonstration Unit using biosolids comingled with food waste and green waste to produce Substitute Natural Gas and to provide preliminary modeling evaluation and design for a five ton-per-day pilot plant for the next phase.

Outreach and Technology Transfer

12486: Technical Assistance with Goods Movement and Zero-Emission Transportation Technologies

| | | |
|-------------------------------|-------------------|-----------|
| Contractor: ICF Resources LLC | SCAQMD Cost-Share | \$ 50,000 |
| Term: 09/24/13 – 09/23/15 | Total Cost | \$ 50,000 |

The Clean Fuels Program supports projects to research, develop, demonstrate, and deploy technologies to accelerate commercialization of clean, new technologies. Due to constant and rapid changes in technologies and the sheer breadth of the potential projects, staff occasionally requires input from experts and practitioners in the field to aid in selecting and establishing projects for funding through the Clean Fuels Program as well as the many incentive programs the SCAQMD administers. ICF International is a leading technology firm with over 40 years of experience and will provide technical assistance with goods movement technologies, alternative fuels, and zero-emission transportation technologies under this contract. ICF has worked as a prime contractor for local, state and federal agencies and has extensive expertise in the areas of fuels and transportation related issues.

13256: Program and Technical Assistance for Clean Vehicle Outreach and Senior Clean Air Fair

| | | |
|---------------------------------|-------------------|-----------|
| Contractor: Three Squares, Inc. | SCAQMD Cost-Share | \$ 21,500 |
| Term: 01/05/13 – 12/31/13 | Total Cost: | \$ 21,500 |

Three Square's Inc. (TSI) developed a customized content management system (CMS) for the Clean Air Choices vehicle comparison calculator. The CMS allows SCAQMD staff to update the vehicles by model year, emission factors and vehicle costs. Only the lowest emission vehicles are included in the database. TSI also prepared custom outreach materials to promote the vehicle calculator and staffed three outreach events where the program was highlighted.

13408: Demonstrate Building Integration of Electric Vehicles, Photovoltaics and Stationary Fuel Cells

| | | |
|--|----------------------------------|------------|
| Contractor: University of California, Irvine | SCAQMD Cost-Share | \$ 150,000 |
| | Cosponsor: | |
| | University of California, Irvine | 120,000 |
| Term: 09/30/13 – 09/29/15 | Total Cost | \$ 270,000 |

U.C. Irvine's Advanced Power and Energy Program will demonstrate building integration of plug-in electric vehicles, photovoltaics and stationary fuel cells with the electrical grid. The CEC through its AB 118 Program recently awarded U.C. Irvine \$120,000 for installation of new Level 2 chargers at multiple locations on campus, and the SCAQMD was asked to partner on this project. Information from these new chargers can be included in this modeling effort, with two to three chargers to be installed near the Multipurpose Science and Technology Building integrated into the building controls. U.C. Irvine will integrate existing computer models for solar photovoltaic, high-temperature fuel cells, electric grid operation and PEV operations, with operational data collected from their existing 95 kW photovoltaic solar system, new and existing

on-campus EVSE and a recently co-funded molten carbonate fuel cell to explore the integration of PEV charging and distributed energy generation.

Transfer: Participate in California Natural Gas Vehicle Partnership

| | | |
|---------------------------------------|-----------------------------|------------|
| Contractor: Transfer from Clean Fuels | SCAQMD Cost-Share | \$ 25,000 |
| | Cosponsors: | |
| | CNGVP Participating Members | 135,000 |
| Term: 03/01/13 – 03/01/13 | Total Cost | \$ 160,000 |

The California Natural Gas Vehicle Partnership (CNGVP) was formed to accelerate the development of advanced natural gas vehicle technologies to provide a benchmark for lowering emissions from petroleum-based engines and to provide a pathway to future fuel cell use in the next two decades. The SCAQMD spearheaded the formation of this strategic alliance, which comprises state and federal air quality, transportation and energy agencies, vehicle and engine manufacturers, fuel providers, and transit and refuse hauler organizations. Partnership Steering Committee members contribute monies to fund specific projects intended to achieve the goal of the Partnership. In March 2013 the SCAQMD approved \$25,000 for the SCAQMD's participation in the Steering Committee for the next two years.

Direct Pay: Participation for CY 2013 Membership in Transportation Research Board and Support of Minority Student Fellows Program

| | | |
|---|--|--------------|
| Contractor: Transportation Research Board | SCAQMD Cost-Share | \$ 37,500 |
| | Cosponsors: | |
| | SCAQMD's Legislative & Public Affairs Office | 32,500 |
| | Participating Members | 3,930,000 |
| Term: 01/01/13 – 12/31/13 | Total Cost | \$ 4,000,000 |

In 2013 the SCAQMD supported the Transportation Research Board (TRB) by participating as a member and sponsoring TRB's 2013 Minority Student Fellowship Program. The mission of the TRB is to promote innovation and progress in transportation through research. In an objective and interdisciplinary setting, TRB facilitates the sharing of information on transportation practice and policy by researchers and practitioners; stimulates research and offers research management services that promote technical excellence; provides expert advice on transportation policy and programs; and disseminates research results broadly and encourages their implementation. TRB's varied activities annually engage more than 7,000 engineers, scientists, and other transportation researchers and practitioners from the public and private sectors and academia, all of whom contribute their expertise in the public interest by participating on TRB committees, panels and task forces. TRB is one of six major divisions of the National Research Council (NRC) - a private, nonprofit institution that is jointly administered by the National Academy of Sciences, the National Academy of Engineering and the Institute of Medicine - and is the principal operating agency of the National Academies in providing services to the government, the public and the scientific and engineering communities. The TRB Executive Committee, whose members are appointed by the chairman of NRC, exercises oversight responsibility for the Board's

programs and activities. Members include senior transportation industry executives, top officials of public-sector transportation agencies, and distinguished researchers from academia. Sponsors and affiliates provide support for TRB core programs and activities. Sponsors are the major source of financial support for TRB’s core technical activities. Federal, state, and local government agencies and professional societies and organizations that represent industry groups are eligible to be TRB sponsors. TRB’s annual expenditures for program activities exceed \$90 million.

Direct Pay: Cosponsor 15 Conferences, Workshops & Events plus 1 Membership

| | | |
|---------------------------|-------------------|--------------|
| Contractor: Various | SCAQMD Cost-Share | \$ 226,164 |
| | Cosponsors: | |
| | Various | 5,020,000 |
| Term: 01/01/13 – 12/31/13 | Total Cost | \$ 5,246,164 |

The SCAQMD regularly participates in and hosts or cosponsors conferences, workshops and events. These funds provide support for the 15 conferences, workshops and events sponsored throughout 2013 as follows: The Women in Green Forum (Southern California & Washington DC); 2013 Asilomar Conference on Transportation & Energy Policy; Electric Drive Transportation Association Campaign and 2013 Conference; February 2013 Clean Fuel Advisory Group Participation Fees; 2013 Mobile Source Air Toxics Workshop; 2013 Real World Vehicle Emissions Workshop; PEMS Conference; 2013 ICEPAG; Act Expo 2013 Washington DC; 6th Symposium on Global Emerging Environmental Challenges and Government; Plug-In 2013; 2013 SoCal Energy Summit; 2013 Life Cycle Analysis of Transportation Fuels Workshop; 2013 Santa Monica AltCar Expo & Conference; and 2013 LA Auto Show Sponsorship. Membership for 2013 to support the Electric Drive Transportation Association is also included.

PROGRESS AND RESULTS IN 2013

Key Projects Completed

A large number of emission sources contribute to the air quality problems in the South Coast Air Basin. Given the diversity of these sources, there is no single technology or “silver bullet” that can solve all of the region’s problems. Accordingly, the SCAQMD continues to support a wide range of advanced technologies, addressing not only the diversity of emissions sources, but also the time frame to commercialization of these technologies. Projects co-funded by the SCAQMD’s Clean Fuels Program include emission reduction demonstrations for both mobile and stationary sources, although legislative requirements limit the use of available funds primarily to on-road mobile sources.

Historically, mobile source projects have targeted low-emission technology developments in automobiles, transit buses, medium- and heavy-duty trucks and off-road applications. These vehicle-related efforts have focused on: 1) advancements in engine design, electric power trains, energy storage/conversion devices (e.g., fuel cells and batteries); and 2) implementation of clean fuels (e.g. natural gas, propane and hydrogen) including their infrastructures. Stationary source projects have included a wide array of advanced low NO_x technologies and clean energy alternatives, such as fuel cells, solar power and other renewable energy systems.

Table 6 (page 51) provides a list of 37 projects and contracts completed in 2013. Summaries of the completed technical projects are included in Appendix C. Selected projects which represent a range of key technologies from near-term to long-term are highlighted below.

In-Use Emissions Testing & Demonstration of Retrofit Technology for On-Road Heavy-Duty Engines

On-road heavy-duty engines are now subject to the 2010 U.S. EPA emissions standards of 0.01 g/bhp-hr PM and 0.20 g/bhp-hr NO_x. Some engine manufacturers are using emissions credits which allow them to produce a mixture of engines certified at, below, or above 0.20 g/bhp-hr NO_x. While recent limited-scale studies have shown reduced NO_x and PM emissions from trucks powered by 2010 compliant engines, other studies indicate a potential increase in some exhaust emissions. As such, additional studies are required to assess the impact of the technologies on emissions from engines used in a variety of applications, particularly since the number of these engines will continue to increase in the future.

In December 2010 and October 2011, the Board awarded contracts to WVU and CE-CERT to conduct in-use emissions testing of 24 MY 2007-2012 heavy-duty vehicles from different vocations and fueling technologies and, if needed, to evaluate emission reduction potential of retrofit technologies for ammonia emission from a heavy-duty natural gas engine. The study also involve the in-use characterization of NO_x and GHG emissions from a MY 2011 heavy-duty MACK diesel vehicle equipped with DPF and SCR during a long-haul operation across the country. The Mack truck was used to transport WVU transportable emissions measurement system across the country while continuously measuring emission through a 40 CFR Part 1065 compliant CVS system for over a 2,500-mile route between Morgantown, WV, and Riverside, CA.



Figure 11: Portable In-Use Emissions Mobile Unit

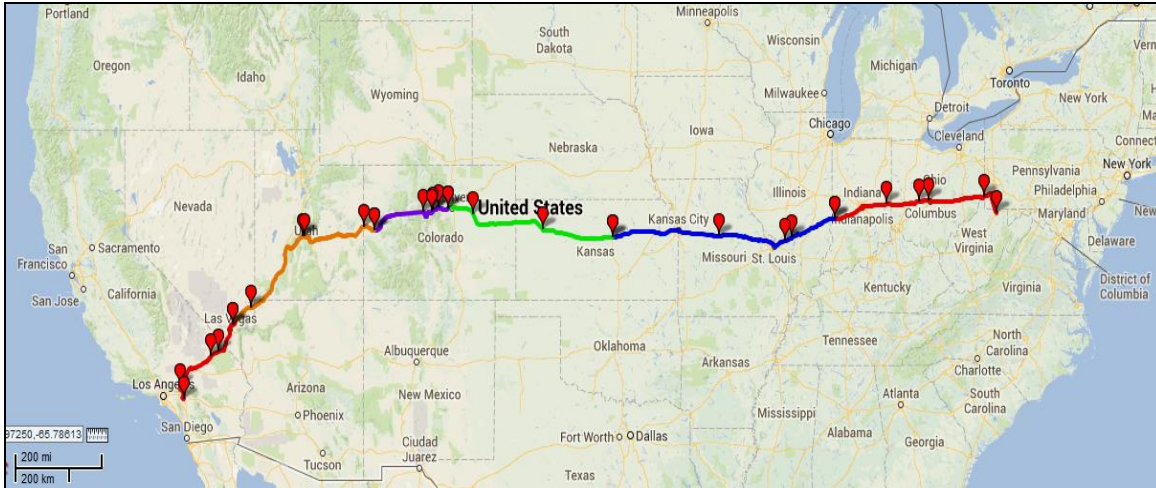


Figure 12: 2,500-Mile Route of In-Use Emissions Study

The test vehicle vocation included goods movement, refuse truck, transit bus and school bus applications. The test matrix involved five natural gas and four dual-fuel (natural gas and diesel) vehicles to be chassis dynamometer tested by WVU, eight diesel and two propane vehicles to be tested by CE-CERT and five diesel vehicles to be tested by both WVU and CE-CERT for inter laboratory comparison. The engine technologies and vocations of vehicles tested by WVU and CE-CERT are shown below.

Figure 13: Vehicle test matrix of engine technologies and vehicle vocations

| Engine/Technology | Vehicle Vocation/Number of Vehicle | | | |
|---|------------------------------------|----------------|--------------------------------|--------------------------------|
| | Transit | School Bus | Refuse | Goods Movement |
| I. Natural gas engine with three-way catalyst | 1 ¹ | - | 1 ¹ | 3 ¹ |
| II. High pressure diesel injection (HPDI) engine with EGR and DPF at 0.8g NO _x | | - | - | 3 ¹ |
| III. HPDI engine with EGR, DPF, and SCR at 0.2g NO _x | | | | 1 ¹ |
| IV. Diesel engine certified at 1.2g NO _x | | - | 1 ² | 1 ³ +2 ² |
| V. Propane and diesel school bus | - | 2 ² | - | - |
| VI. Propane engine certified at or below 0.2g NO _x | | | 1 ² | |
| VII. Diesel Engine certified above 0.2g NO _x w/o SCR | | - | 1 ³ + | 1 ³ +1 ² |
| VIII. Diesel Engine certified at or below 0.2g NO _x w/SCR | | - | 1 ³ +1 ² | 1 ³ +2 ² |

¹ WVU test vehicles; ² CE-CERT test vehicles; ³ Round-robin test vehicles

The in-use emissions results showed that the three-way catalyst equipped stoichiometric natural gas vehicles emitted significantly lower distance-specific NO_x emissions than comparable SCR equipped diesel vehicles over all applications. The stoichiometric fuel-air-ratio strategy contributed to a sustained NO_x reduction activity by the three-way catalyst, unlike the SCR technology that is affected by vehicle operation that results in exhaust temperature lower than 250 degrees Celsius. For example, stoichiometric natural gas vehicles emitted 91% lower distance-specific NO_x emissions than a SCR equipped diesel vehicles over a near-dock driving cycle characterized by extended idle and creep operation. The SCR catalyst activity profile suggested

the after-treatment system to be active less than 40% of the time during all types of drayage operations. The dual-fuel natural gas vehicle exhibited a SCR catalyst activity profile similar to that of the diesel technology vehicles. However, the lower in-cylinder NO_x formation due to dual-fuel combustion resulted in an overall reduction in NO_x emissions compared to SCR equipped diesel vehicles. Similarly, the natural gas refuse vehicle emitted 20% lower NO_x emissions than a comparable SCR equipped diesel refuse vehicle. The PM emissions from both natural gas engines and diesel engines equipped with DPF were close to the detection limits of the gravimetric method.

The activity of the three-way catalyst contributes to the formation of ammonia, and as a result, the stoichiometric natural gas vehicles were characterized by ammonia emissions close to 1 g/mi over all driving cycles. N_2O emissions were observed only during the warm-up period of the three-way catalyst. No significant ammonia emissions were detected from SCR equipped diesel vehicles.

In conclusion, emissions comparison between stoichiometric natural gas vehicles and SCR equipped diesel vehicles show the three-way catalyst after-treatment system to be superior in NO_x reduction compared to SCR system. Since, the TWC is dependent on the control of air-fuel ratio close to stoichiometric rather than exhaust temperature characteristics, the activity of the TWC is extended even to idle and creep mode operation. Therefore, natural gas engines can be viewed as better alternatives to modern diesel technology in certain applications such as refuse trucks and port drayage trucks that are characterized by extended idle and creep. The fuel range limitation of stoichiometric natural gas vehicle may limit its operation to smaller geographical coverage. However, the dual-fuel HPDI vehicles with the lean-burn technology provided the same range advantage of a diesel vehicle with a relatively lower NO_x emissions profile.

The cross-country study showed that the NO_x conversion efficiency of the SCR after-treatment system to be on an average 83-88% during the course of the test campaign. Sustained temperatures of greater than 250 Deg C contributed to high SCR activity at highway driving conditions. One of the shortcomings of the cross-country study was the lack of high traffic densities in major sections of the route. Therefore the effect of extended idling and stop-and-go traffic on SCR activity was seldom noticed. A one hour duration of a "high NO_x " event observed in the state of Kansas contributed to close 92% of the total NO_x emitted during a 5 hour duration micro trip. The "high NO_x " event can be attributed to SCR regeneration strategies adopted by OEM to burn adsorbed hydrocarbons and or prevent urea crystallization.

Demonstrate Quick Charge Infrastructure for Electric Buses

Transit buses are ideal applications for advanced, alternative energy technologies that address criteria pollutant and green house gas emissions because they operate in highly visible, congested areas where air quality is a problem. Electric zero emission transit buses address these problems. Traditionally, the range and charging needs of batteries have been barriers to employ battery-powered buses in large-scale applications. Additionally, the weight of traditional buses has made it difficult to feasibly incorporate a battery with sufficient power and energy storage capacity into coach designs. By using a smaller battery that can be charged quickly and repeatedly, the bus weight and cost can be reduced. The keys to quick charge electric bus technology are the utilization of a quick-charge battery and quick-charge infrastructure. The battery must be able to retain its energy reserve and charging profile over many charge-discharge cycles and be quick-charged in ten minutes or less. The quick charge infrastructure must be able to deliver a large amount of energy in a short period of time, and operate safely without human intervention because of the high voltage and associated heavy cables.

Foothill Transit replaced three diesel buses with Ecoliner electric buses with quick-charge capability and quick-charge infrastructure on an existing route from the City of La Verne to the

City of Pomona. The 35-foot Ecoliner bus carries 37 passengers and is powered by a 75 kW hr battery. Funding from SCAQMD supported the charging technology, charging station and supplemental charging components associated with the Ecoliner buses. The charging system connects to the bus from overhead. The charging



Figure 14: Foothill Transit's Electric Bus Charging in Pomona

station includes the architectural and engineering design, the installation and construction of the charging station for the three buses. The benefits of this proprietary technology are a safe automated charging system that will perform without human intervention.

All three Ecoliner buses are running in daily revenue service on line 291 from La Verne to Pomona. The three buses have accumulated nearly 175,000 in-service miles and Proterra data collection indicates overall energy efficiency is as good as or better than initially expected. Foothill Transit became the first transit agency in the U.S. to use on-route charge electric buses, and they plan to purchase an additional 12 buses from Proterra to completely electrify the 291 route between La Verne and Pomona and use 3 of the 12 in other routes within their territory.

Demonstrate Advanced Fuel Cell Bus

Fuel cell buses have been successfully demonstrated in recent years in California, across the United States and Canada. The SCAQMD has long sponsored the development and deployment of fuel cell bus technologies because these heavy-duty vehicles have zero-tailpipe emissions, help establish hydrogen refueling infrastructure, and operate in congested urban areas providing the greatest outreach potential through ridership. The next step in the development of this clean air technology is commercialization. The intent of American Fuel Cell Bus (AFCB) project was the development of a newly designed fuel cell bus with a North American chassis, as well as domestically sourced fuel cell and drive components.

The AFBC achieved an 83% average availability starting from the clean point established at the beginning of March, 2012 through the end of December, 2012. Following the clean point, bus availability in six out of the ten months was above the target of 85%. During the demonstration phase the American Fuel Cell Bus experienced occasional anomalies which included several component failures. In each case the issues were promptly addressed by the IPT. In general the issues that were encountered were fairly “low-tech” in nature.



Figure 15: American Fuel Cell Bus In Service SunLine Transit

The project brought together a newly formed team of world class companies to apply their products and expertise to develop a first of its kind 40' heavy duty, zero emissions, fuel cell bus. The American Fuel Cell bus project favorably addressed many of the challenges currently facing the introduction of fuel cell technology and met the goals for the project that were established at the onset. The

project advanced the pathway to commercialization and addressed challenges of cost competitiveness, reliability, durability, integration and manufacturing. With SunLine Transit at both the project leadership and the operational ends of the project, the team forged a blueprint on how to deliver and operate reliable, American built, zero emission technology in the transit world. The project independently verified the frequent claim that Hydrogen powered, fuel cell technology is indeed “proving out”. The relatively “low tech” nature of the issues encountered during demonstration period suggest that the major technological hurdles of fuel cell powered transit have been substantially addressed. Additionally key enabling technologies including fully electrified accessories and reliable fueling infrastructure have also been advanced. The average availability of the bus exceeded the availability of the CNG reference fleet and availability is expected to improve as the integration is refined. This suggests that the technology has matured and will continue to mature to a level that supports larger scale deployments. The performance, reliability, maintenance and operating cost of the American Fuel Cell Bus is stable and approaching an affordability point that enables transit properties to consider applying for funds to deploy fuel cell buses or to support a larger centralized deployment.

Natural Gas Infrastructure & Deployment

The AQMP identifies the use of alternative clean fuels in mobile sources as a key attainment strategy, and the importance of natural gas refueling infrastructure cannot be overemphasized if the region is to realize large-scale deployment of alternative fuel technologies. Natural gas vehicles have lower emissions than gasoline and significantly lower than their diesel counterparts and represent the cleanest internal combustion engine powered vehicles available in today’s market. Consequently, amongst the mixed portfolio of technical priorities within the Clean Fuels Program is the continued emphasis on the installation, maintenance and expansion of natural gas infrastructure throughout the Basin including the Ports. In 2013 three significant natural gas infrastructure contracts, which are representative of the natural gas refueling infrastructure the Clean Fuels Program encourages and supports, were completed and closed as follows:

1) In 2008 the City of San Bernardino built a nearly \$2 million LNG-L/CNG station including a 15,000 gallon LNG bulk storage tank at its City municipal service yard. The station has now been operating successfully for five years, fueling their 75 vehicle, and ever growing, natural gas fleet with throughput in 2013 of more than 85,000 gallons of natural gas.

2) Also in 2008 the Los Angeles Unified School District built a \$1.3 million time- and fast-fill CNG station at its Sun Valley Bus Garage. The station has now been operating successfully for five years, fueling their 100 plus CNG school bus fleet with throughput in 2012 of nearly one-half million DGE of natural gas.

3) In 2012 Border Valley Trading and its development partner Hey Day Farms, which are exporters of agri-products, built a \$2.5 million LNG fueling station including a 6,000 gallon fueling unit in Palm Springs. The station has been operating successfully, fueling their 40 heavy-duty LNG trucks with throughput for the first quarter exceeding 37,000 GGEs. In the near future they plan to expand storage and fueling capabilities at this station.



Figure 16: City of San Bernardino’s East Valley Regional Fueling Facility

Recognizing the importance of natural gas infrastructure, the SCAQMD actively pursues outside funding to supplement its own Clean Fuels Program dollars in this core technology. Table 5 is a comprehensive summary of federal and state revenue awarded to the SCAQMD from 2009 to 2012 and includes several natural gas infrastructure projects this agency is administering to fill critical gaps in natural gas infrastructure. One representative example is the DOE Clean Cities award the SCAQMD received to expand the LNG corridor from Ontario to Las Vegas, which included not only the installation of a publicly accessible LNG fueling station in Las Vegas but also the purchase of 48 heavy-duty LNG tractors for operation by UPS. The Clean Fuels Program Plan Update for 2014 continues to emphasize natural gas infrastructure and deployment projects, allocating 8% of the \$16.4 million of potential projects.

Table 6: Projects Completed between January 1 & December 31, 2013

| Contract | Contractor | Project Title | Date |
|---|---|---|-------------|
| <i>Infrastructure and Deployment</i> | | | |
| 07149 | City of San Bernardino | Purchase & Install New Public Access LNG-L/CNG Fueling Station at City Municipal Service Yard | Dec-13 |
| 08271 | Los Angeles Unified School District | Purchase & Install New CNG Fueling Station at Sun Valley Bus Garage | Dec-13 |
| 11559 | Ace Parking Management | Purchase & Deploy Six CNG Cutaway Shuttle Vans | Jul-13 |
| 12273 | Border Valley Trading | Construct New LNG Fueling Station in Palm Springs | Jul-13 |
| 12386 | Agility Fuel Systems | Demonstrate Natural Gas-Powered Police Vehicle | Jun-13 |
| <i>Fuels/Emission Studies</i> | | | |
| 08320 | University of Denver | Remote Sensing Measurements of On-Road Emissions from Heavy-Duty Diesel Vehicles | Dec-13 |
| 08321 | Environmental Systems Products | Remote Sensing Measurements of On-Road Emissions from Heavy-Duty Diesel Vehicles | Dec-13 |
| 11611 | West Virginia University Research Corporation | In-Use Emissions Testing & Demonstrate Retrofit Technology for On-Road Heavy-Duty Engines | Oct-13 |
| 11612 | University of California, Riverside/CE-CERT | In-Use Emissions Testing & Demonstrate Retrofit Technology for On-Road Heavy-Duty Engines | Aug-13 |
| 12154 | University of California, Riverside | Identify Cellulosic Biomass Feedstocks | Oct-13 |
| 13451 | Energy Solutions | Passenger Vehicle Tire Replacement Efficiency Study | Dec-13 |
| <i>Emission Control Technologies</i> | | | |
| 08246 | Griffith Construction Company | Showcase: Demonstrate NO _x and PM Emission Control Technology on Diesel-Powered Construction Equipment | Dec-13 |
| 10069 | Johnson Matthey, Inc. | Develop & Demonstrate Selective Catalytic Regeneration Technology for NO _x and PM Emissions Control on Heavy-Duty Trucks | Oct-13 |
| 12485 | California State University Long Beach Foundation | CSULB CEERS Student Education Study to Assess the Effects of a Humid Air System with an Exhaust Scrubber on Diesel Emissions | Mar-13 |
| <i>Electric/Hybrid Technologies & Infrastructure</i> | | | |
| 99109† | Toyota Motor Credit Corporation | Lease Two Toyota RAV4 Electric Vehicles | Feb-13 |
| 09345 | South Bay Cities Council of Governments | Demonstrate Medium-Speed Neighborhood Electric Vehicles | Apr-13 |

Table 6: Projects Completed between January 1 & December 31, 2013(cont'd)

| Contract | Contractor | Project Title | Date |
|--|---|---|-------------|
| <i>Electric/Hybrid Technologies & Infrastructure (cont'd)</i> | | | |
| 10738 | Foothill Transit | Demonstrate Quick Charge Infrastructure for Electric Buses | Jun-13 |
| 12024 | ECotality North America | Upgrade & Install Electric Charging Infrastructure | May-13 |
| <i>Mobile Fuel Cell Technologies</i> | | | |
| 10501† | American Honda Motor Company | Lease a Clarity Fuel Vehicle for Three Years | Jul-13 |
| 10650 | SunLine Transit Agency | Demonstrate Advanced Fuel Cell Bus (American Fuel Cell Bus) | Jun-13 |
| 10714 | University of California, Irvine | Develop Fuel Cell Gas-Turbine Hybrid System for On-Board Locomotive Applications | Dec-13 |
| 13113 | Bevilacqua-Knight, Inc. | Participate in California Fuel Cell Partnership for Calendar Year 2012 & Provide Support for Regional Coordinator | Jan-13 |
| 14054 | Bevilacqua-Knight, Inc. | Participate in California Fuel Cell Partnership for Calendar Year 2013 & Provide Support for Regional Coordinator | Dec-13 |
| <i>Health Impacts Studies</i> | | | |
| 09307† | California Air Resources Board | In-Vehicle Air Pollution Exposure Measurement and Modeling | Jun-13 |
| <i>Outreach and Technology Transfer</i> | | | |
| 02308† | Sperry Capital, Inc. | Evaluate Financial Stability of Potential Contractors | Dec-13 |
| 04049† | Engine, Fuel and Emissions Engineering, Inc. | Technical Assistance for Alternative Fuels Engine Technology | Apr-13 |
| 05126† | St. Croix Research | Technical Assistance for Development, Outreach & Commercialization of LNG, CNG and Hydrogen Fuels | Mar-13 |
| 07314† | Engine, Fuel and Emissions Engineering, Inc. | Technical Assistance with Advanced Heavy-Duty and Off-Road Technologies | Dec-13 |
| 09255† | Stan Lisiewicz | Technical Assistance with Caltrans | Dec-13 |
| 10056† | San Diego Miramar College (Advanced Transportation Technology & Energy, San Diego Community College District) | Enhanced Training Technology Program | Dec-13 |
| 10662† | Gladstein, Neandross & Associates | Technical Assistance for Implementation of Proposition 1B Goods Movement and Truck Replacement Program | Dec-13 |
| 10700† | TIAX LLC | Technical Assistance for Advanced, Low- and Zero-Emissions Mobile and Stationary Source Technologies | May-13 |

Table 6: Projects Completed between January 1 & December 31, 2013 (cont'd)

| Contract | Contractor | Project Title | Date |
|---|---|--|-------------|
| <i>Outreach and Technology Transfer (cont'd)</i> | | | |
| 12313† | CSA America Inc. | CNG Fuel System Inspection Certification Courses | May-13 |
| 13256 | Three Squares Inc. | Develop, Initiate and Implement Clean Vehicle Outreach Project | Dec-13 |
| 13268† | California Hydrogen Business Council | Platinum Membership Renewal for 2012 | Jun-13 |
| 13414† | Three Squares Inc. | Cosponsor The Women in Green Forum in Southern California & Washington, D.C. | Nov-13 |
| 13415† | University of California, Davis, Office of Research | Cosponsor the Asilomar 2013 Conference on Transportation & Energy Policy | Dec-13 |

†Two-page summary reports (as provided in Appendix C) are not required for level-of-effort technical assistance contracts, leases or cosponsorships; or it was unavailable at time of printing this report.

CLEAN FUELS PROGRAM 2014 PLAN UPDATE

The Clean Fuels Program, which was first created in 1988, along with establishment of the SCAQMD's Technology Advancement Office (TAO), continually seeks to support the development and deployment of zero and near-zero emission technologies over a broad array of applications and spanning near- and long-term implementation. Planning has been and remains an ongoing activity for the program, which must remain flexible to address evolving technologies and the latest progress in the state-of-the-technology as well as new research and data. Every year the SCAQMD re-evaluates its Clean Fuels Program and crafts a Plan Update to essentially re-calibrate its compass for the upcoming CY. This comprehensive document is the Plan Update for 2014.

Technology Funding Priorities for 2014

The past few years have been especially difficult for technology partnering due to the dramatic global economic downturn, which shifted national research and development priorities and opportunities. On the other hand, the SCAQMD was able to take advantage of the opportunities presented by the American Recovery and Reinvestment Act (ARRA), securing nearly \$111 million in ARRA funds and other federal and state funding opportunities from 2009 to 2012. The SCAQMD continued this trend in 2013 by securing additional federal and state funding totaling \$15.8 million. Some of the projects implemented with these funds will be administered as part of the Clean Fuels Program, while others, which align well with and are complementary to the Clean Fuels Program, will be implemented under other SCAQMD programs. Nonetheless, the challenge for the SCAQMD continues to be how to identify project or technology opportunities in which its available funding can encourage and accelerate the commercialization and deployment of progressively cleaner technologies in the Basin.

To overcome these challenges, the SCAQMD continued to expand its outreach and networking activities. These efforts not only include continued participation on numerous and varied collaborative and working groups, reaching out to technology developers as well as other funding agencies, and releasing Program Opportunity Notices to essentially throw out a wide net to solicit project ideas and concepts, but over the last few years the SCAQMD has also hosted a variety of technology forums, such as the one in November 2013 on near-road mitigation measures and technologies, and released Requests for Information to determine the state of various technologies. As a result, the SCAQMD's Technology Advancement Office has developed this comprehensive plan for accelerating the development, demonstration and deployment of cleaner technologies.

The overall strategy of the SCAQMD's Clean Fuels Program is based in large part on technology needs identified through the AQMP process and the SCAQMD Board's directives to protect the health of residents of Southern California, which encompasses approximately 16.8 million people (nearly half the population of California). The AQMP is the long-term "blueprint" that defines the basin-wide emission reductions needed to achieve ambient air quality standards by 2014, 2023 and 2032, the regulatory measures to achieve those reductions, the timeframes to implement these proposed measures and the technologies or types of technologies required to meet these future federal standards.

The 2012 AQMP identifies the need for 200 tons/day NO_x reductions to be adopted by 2020 for full implementation by 2023 and in large part focuses control measures on transportation

technologies and cleaner fuels. Moreover, the SCAQMD is currently only one of two regions in the nation recognized as an extreme ozone nonattainment area (the other is San Joaquin Valley). This is especially noteworthy because the largest contributor to ozone is NO_x emissions, and mobile sources (on- and off-road as well as aircraft and ships) contribute to more than three-fourths of NO_x emissions in this region. These emission reduction needs are further identified in a joint SCAQMD, California Air Resources Board (CARB) and San Joaquin Valley Air Pollution Control District effort, “Vision for Clean Air: A Framework for Air Quality and Climate Change Planning.”² The overwhelming hurdles to reduce ozone and NO_x will require the Clean Fuels Program to encourage and accelerate advancement of transformative technologies and commercialization of progressively lower-emitting vehicles and fuels. The Program must also remain flexible to address the needs which will be identified in the current planning process for the 2016 AQMP which will focus on addressing ozone standards. Furthermore, volatile organic compounds (VOCs) and fine particulate matter (PM_{2.5}) produced from mobile sources must also be addressed. The NO_x and VOC emission sources of greatest concern to this region are heavy-duty on-road and off-road vehicles as well as to a lesser extent light- and medium-duty on-road vehicles. And while it is anticipated that the 2014 standard for PM_{2.5} will be attained for this region, it is contingent upon compliance and implementation of existing and proposed rules and regulations.

In addition to providing for specific control measures based on known technologies and control methods, the Clean Air Act has provisions for more general measures based on future, yet-to-be-developed technologies. These “black box” measures are provided under Section 182(e)(5) of the Clean Air Act for regions that are extreme non-attainment areas, such as the South Coast Basin. The technologies that are developed and demonstrated in the Clean Fuels Program can serve as control measures for the “black box.”

In recent years, it has become increasingly clear that the effect of containers through the Ports of Los Angeles and Long Beach and the subsequent movement of goods throughout the region not only have a dramatic impact on air quality but also the quality of life to the communities along the major goods movement corridors. In recognition of these impacts, the SCAQMD has initiated a concerted effort in the last few years to actively pursue development of zero and near-zero emissions goods movement technologies, such as electric trucks, plug-in hybrid trucks with all-electric range, trucks operating from wayside power including overhead catenary technology and near-zero heavy-duty technologies. The prioritization of these types of projects as well as potential technologies which assist with their further development and deployment remain a strong emphasis of the 2014 Plan Update.

This 2014 Plan Update includes projects to develop, demonstrate and commercialize a variety of technologies, from near-term to long-term, that are intended to provide solutions to the emission control measures identified in the 2012 AQMP and to address the increasing challenges this region is facing to meet air quality standards, including new and changing federal requirements such as a the new 2032 ozone standard in addition to the current 2023 standard, implementation of new technology measures, and the continued development of economically sound compliance approaches. The scope of projects in the 2014 Plan Update also needs to remain sufficiently flexible to address new challenges and proposed methodologies that are identified in the 2012 AQMP as well as the upcoming 2016 AQMP. The results of the fourth Multiple Air Toxics Exposure Study (MATES IV), which should be available mid-2014, may also affect future funding direction. This follow-up study is intended to update emissions inventory of toxic air contaminants and conduct a regional modeling effort to characterize risk across the Basin, including measuring ultrafine particle and black carbon concentrations. Finally, given the

² http://www.arb.ca.gov/planning/vision/docs/vision_for_clean_air_public_review_draft.pdf

increasing call for action by the federal government to reduce carbon and greenhouse gases (e.g., President Obama's Climate Action Plan released in June 2013), the co-benefits of technologies should also be considered.

Within each technical area, there exists a range of projects that represent near-term to long-term efforts. The SCAQMD Clean Fuels Program tends to support development, demonstration and technology commercialization efforts, or deployment, rather than fundamental research. The general time-to-product for these efforts, from long-term to near-term, is described below.

- Technology *development* projects are expected to begin during 2014 with durations of about two years. Additional field demonstrations to gain long-term verification of performance, spanning up to two years, may also be needed prior to commercialization. Certification and ultimate commercialization would be expected to follow. Thus, development projects identified in this plan are expected to result in technologies ready for commercial introduction as soon as 2017. Projects are also proposed that may involve the development of emerging technologies that are considered longer term and, perhaps higher risk, but with significant emission reduction potential. Commercial introduction of such long-term technologies would not be expected until 2019 or later.
- More mature technologies, those ready to begin field *demonstration* in 2014, are expected to result in a commercial product in the 2015-2016 timeframe. Technologies being field demonstrated generally are in the process of being certified. The field demonstrations provide a controlled environment for manufacturers to gain real-world experience and address any end-user issues that may arise prior to the commercial introduction of the technology. Field demonstrations provide real-world evidence of a technology's performance to help allay any concerns by potential early adopters.
- *Deployment* or technology commercialization efforts focus on increasing the utilization of clean technologies in conventional applications. It is often difficult to transition users to a non-traditional technology or fuel, even if such a technology or fuel offers significant societal benefits. As a result, one of government's roles is to support and offset any incremental cost to help accelerate the transition and use of the cleaner technology. The increased use and proliferation of these cleaner technologies often depends on this initial support and funding as well as efforts intended to increase confidence of stakeholders that these technologies are real, cost-effective in the long term and will remain applicable.

Technical Priorities (Core Technologies)

The SCAQMD program maintains flexibility to address dynamically evolving technologies incorporating the latest progress. Over the years, the SCAQMD has provided funding for projects for a wide variety of low and zero emission projects. In order to meet the upcoming 2014 PM_{2.5} and 2023 8-hour ozone standards, the areas of zero and near-zero emission technologies need to be emphasized and this effort can be seen in the following sections and in the proposed funding distribution in Figure 17. The major technical program areas are identified below with specific project categories discussed in more detail in the following sections. The technology areas identified reflect the staff's forecast for upcoming projects and needs within the basin but is not intended to be considered a budget.

Not all project categories will be funded, due to cost-share constraints, focus on the control measures identified in the 2012 AQMP and the availability of suitable projects. The technical areas identified below are clearly appropriate within the context of the current air quality challenges and opportunities for technology advancement. Within these areas there is significant opportunity for SCAQMD to leverage its funds with other funding agencies to expedite the

implementation of cleaner alternative technologies in the Basin. A concerted effort is also made to form private partnerships to further leverage funds. In fact, the SCAQMD historically has leveraged its funds \$1 for every \$3-\$4 of total project costs.

It should be noted, however, that these priorities may shift during the year in keeping with the diverse and flexible “technology portfolio” approach. Changes in priority may occur to (1) capture opportunities such as cost-sharing by the state government, the federal government, or other entities, or (2) address specific technology issues which affect residents within the SCAQMD’s jurisdiction. The following technical areas are listed by current SCAQMD priorities based on the goals for 2014.

Electric/Hybrid Technologies & Infrastructure

If the region hopes to meet the federal standards for PM_{2.5} and ozone, a primary focus must be on zero and near-zero emission technologies. A leading strategy to achieve these goals is the wide-scale implementation of electric drive systems for all applicable technologies. With that in mind, the SCAQMD seeks to support projects to address the main concerns regarding cost, battery lifetime, travel range, charging station infrastructure and manufacturer commitment. Integrated transportation systems can encourage further reduction of emissions by matching the features of electric vehicles (zero emissions, zero start-up emissions, limited range) to typical consumer demands for mobility by linking them to transit.

The development and deployment of zero emission goods movement systems remains one of the top priorities for the SCAQMD to support a balanced and sustainable growth in the port complex. The SCAQMD continues to work with our regional partners, in particular the Ports of Los Angeles and Long Beach, the Southern California Association of Governments (SCAG) and Los Angeles County Metropolitan Transportation Association (LACMTA), to identify technologies which could be beneficial to and garner support from all stakeholders. Specific technologies include zero emission trucks (using batteries and/or fuel cells), near-zero emission trucks with all-electric range using wayside power (catenary or roadbed electrification), locomotives with near-zero emissions (e.g., 90% below Tier 4), electric locomotives using battery tender cars and catenary, and linear synchronous motors for locomotives and trucks.

There is a high level of interest from major automobile manufacturers for hybrid-electric technologies in light-, medium- and heavy-duty applications as well as off-road equipment. In particular, there are increasing numbers of diesel- and gasoline-fueled hybrid-electric vehicles and multiple models of light-duty plug-in hybrid and battery electric vehicles (BEVs). Such vehicles offer the benefits of higher fuel economy and range as well as lower emissions. Hybrid electric technology is not limited to gasoline and diesel engines and can be coupled with natural gas engines, microturbines and fuel cells for further emission benefits. Additionally, continued advancements in the light-duty arena, which while there are commercially available product is not yet mainstream technology, may have applications for medium- and heavy-duty vehicles. Opportunities to develop and demonstrate technologies that could enable expedited widespread use of electric and hybrid-electric vehicles in the Basin include the following:

- development and demonstration of hybrid and electric technologies for goods movement, e.g., series hybrids with all electric range and trolley trucks on catenary wayside power;
- evaluation and demonstration of light-, medium- and heavy-duty plug-in hybrid electric vehicles;
- development and demonstration of CNG hybrid vehicle;
- demonstration of full performance and niche application battery electric vehicles;

- demonstration of integrated programs that make best use of electric drive vehicles through interconnectivity between fleets of electric vehicles and mass transit, and web-based reservation systems that allow multiple users;
- demonstration of heavy-duty battery electric vehicles;
- demonstration of heavy-duty hybrid vehicles including hydraulic and series hybrid concepts;
- development of streamlined implementation procedures to prepare and accelerate EV market penetration and commercialization; and
- demonstration and installation of EV infrastructure to support the electric and hybrid-electric vehicle fleets currently on the roads or soon entering the market, and to reduce cost, improve convenience and integrate with renewable energy and building demand management strategies (e.g., vehicle-to-grid or vehicle-to-building functionality).

Engine Systems

Natural gas engines are experiencing huge market growth due to the low cost of fuel. In order to achieve the emission reductions required for the South Coast Air Basin, the internal combustion engines (ICEs) used in the heavy-duty sector will require emissions much lower, i.e., 90% than the 2010 standards. Future projects will support the development, demonstration and certification of engines that can achieve these massive emissions reductions using an optimized systems approach. Specifically, these projects are expected to target the following:

- development of ultra-low emissions natural gas engines for heavy-duty vehicles;
- continued development and demonstration of alternative fuel medium-duty and heavy-duty engines and vehicles;
- development and demonstration of clean alternative fuel engines for off-road applications;
- evaluation of alternative engine systems such as compressed air propulsion and hydraulic plug-in hybrid vehicles; and
- development and demonstration of engine systems that employ advance fuel or alternative fuels, engine design features, improved exhaust or recirculation systems, and aftertreatment devices.

Hydrogen & Fuel Cell Technologies & Infrastructure

The SCAQMD supports hydrogen infrastructure and fuel cell technologies as one option in our technology portfolio and is dedicated to assisting federal and state government programs to deploy fuel cell vehicles (FCVs) by supporting the required refueling infrastructure.

SCAQMD works closely with the California Fuel Cell Partnership (CaFCP) to further the commercialization of fuel cells for transportation and install the required hydrogen refueling infrastructure. In mid-2012 the CaFCP published a roadmap describing the first network of commercial hydrogen stations in California, calling for 68 hydrogen fueling stations in cluster communities at specific destinations by 2016. Calendar Years 2015-2017 are a critical timeframe for the introduction of FCVs. Since stations need one to two years lead time for permitting and construction, plans for stations need to be initiated now. Coordination with the Division of Measurement Standards also needs to occur to establish standardized measurements for hydrogen refueling. In addition, new business models and funding besides grants for construction need to be explored to enable the station operations to remain solvent during the early years until vehicle numbers ramp up.

The California Energy Commission (CEC) based its recent AB 118 hydrogen funding strategy on CaFCP's roadmap as well as the University of California, Irvine's Advanced Power and Energy

Program. In late 2012 the CEC issued a \$28.6 million Program Opportunity Notice for hydrogen fuel infrastructure, and in mid-2013 SCAQMD was awarded a \$6.7 million award to implement the upgrade and refurbishment of existing hydrogen fueling stations to ensure legacy stations continue operation as FCVs become available in the market. Additionally, in September 2013 the Governor signed Assembly Bill 8 providing significant funding for hydrogen stations, which will greatly assist in making further inroads toward expanding the hydrogen infrastructure network in California. The SCAQMD will work closely with state agencies to implement these programs and continue efforts to upgrade and refurbish existing hydrogen infrastructure.

The 2014 Plan Update identifies key opportunities while clearly leading the way for pre-commercial demonstrations of original equipment manufacturer (OEM) vehicles. Future projects may include the following:

- development and demonstration of hydrogen-natural gas vehicles for medium- and heavy-duty applications as well as stationary power applications;
- continued development and demonstration of distributed hydrogen production and refueling stations, including energy stations with electricity and hydrogen co-production and higher pressure (10,000 psi) hydrogen dispensing;
- development and demonstration of cross-cutting fuel cell applications (e.g. plug-in hybrid fuel cell vehicles);
- development and demonstration of fuel cells in off-road, locomotive and marine applications;
- demonstration of fuel cell vehicles in controlled fleet applications in the Basin; and
- develop and implement strategies with government and industry to build participation in the hydrogen market including certification and testing of hydrogen as a commercial fuel to create a business case for investing.

Infrastructure and Deployment (NG)

The importance of refueling infrastructure cannot be overemphasized for the realization of large deployment of alternative fuel technologies. Significant demonstration and commercialization efforts funded by the Clean Fuels Program as well as other local, state and federal agencies are underway to: 1) support the upgrade and buildup of public and private infrastructure projects, 2) expand the network of public-access and fleet fueling stations based on the population of existing and anticipated vehicles, and 3) put in place infrastructure that will ultimately be needed to accommodate transportation fuels with very low gaseous emissions.

Compressed and liquefied natural gas (CNG and LNG) refueling stations are being positioned to support both public and private fleet applications. Upgrades and expansions are also needed to refurbish or increase capacity for some of the stations installed five years ago as well as standardize fueling station design, especially to ensure growth of alternative fuels throughout the South Coast Air Basin and beyond. Funding has been provided at key refueling points for light-, medium- and heavy-duty natural gas vehicle users traveling from the local ports, along I-15 and The Greater Interstate Clean Transportation Corridor (ICTC) Network.

Active participation in the development of NFPA fire and safety codes and standards, cost and economics of the new fuels, public education and training and emergency response capability are just a few areas of the funded efforts that have overcome public resistance to these new technologies. Some of the projects expected to be developed and co-funded for infrastructure development are:

- Development and demonstration of renewable natural gas as a vehicle fuel from renewable feedstocks and biowaste;

- Development and demonstration of advanced, cost effective methods for manufacturing synthesis gas for conversion to renewable natural gas;
- Deployment of natural gas home refueling appliances for light-duty vehicles;
- Enhancement of safety and emissions reduction from LNG refueling equipment;
- Expansion of fuel infrastructure, fueling stations, and equipment; and
- Expansion of infrastructure connected with existing fleets, public transit, and transportation corridors.

Emission Control Technologies

Although engine technology and engine systems research is required to reduce the emissions at the combustion source, post-combustion cleanup methods are also needed to address the current installed base of on-road and off-road technologies. Existing diesel emissions can be greatly reduced with aftertreatment controls such as particulate matter (PM) traps and catalysts, as well as lowering the sulfur content or using additives with diesel fuel. Gas-to-Liquid (GTL) fuels, formed from natural gas or other hydrocarbons rather than petroleum feedstock and emulsified diesel, provide low emission fuels for use in diesel engines. As emissions from engines become lower and lower, the lubricant contributions to VOC and PM emissions become increasingly important. The most promising of these technologies will be considered for funding, specifically:

- evaluation and demonstration of new emerging liquid fuels, including alternative and renewable diesel and GTL fuels;
- development and demonstration of advanced aftertreatment technologies for mobile applications (including diesel particulate traps and selective catalytic reduction catalysts);
- development and demonstration of low-VOC and PM lubricants for diesel and natural gas engines; and

Emissions, Fuels and Health Impacts Studies

The monitoring of pollutants in the Basin is extremely important, especially when focused on (1) a particular sector of the emissions inventory (to identify the responsible technology) or (2) exposure to pollution (to assess the potential health risks). Recent studies indicate that smoggy areas can produce irreversible damage to children's lungs. This information highlights the need for further emissions and health studies to identify the emissions from high polluting sectors as well as the health effects resulting from these technologies.

Over the past few years, the SCAQMD has funded emission studies to evaluate the impact of tailpipe emissions of biodiesel and ethanol fueled vehicles mainly focusing on criteria pollutants and greenhouse gas (GHG) emissions. These studies showed that biofuels, especially biodiesel, can contribute to higher NO_x emissions while reducing other criteria pollutant emissions. Furthermore, despite recent advancements in toxicological research related to air pollution, the relationship between particle chemical composition and health effects is still not completely understood, especially for biofuels. Therefore, the SCAQMD has recently funded studies to investigate the physical and chemical composition and toxicological potential of tailpipe PM emissions from biodiesel and ethanol fueled vehicles to better understand their impact on public health. Studies will continue in 2014 to further investigate the toxicological potential of emissions, such as ultrafines and vapor phase substances, and to determine whether other substances such as volatile or semi-volatile organic compounds are being emitted in lower mass emissions that could pose harmful health effects.

In recent years, there has also been an increased interest both at the state and national level on the use of alternative fuels including biofuels to reduce petroleum oil dependency, GHG emissions

and air pollution. In order to sustain and increase biofuel utilization, it is essential to identify feedstocks that can be processed in a more efficient, cost-effective and sustainable manner. One such fuel staff is interested in pursuing is dimethyl ether (DME). This synthetic fuel can be made from renewable natural gas resources and has characteristics similar to gas-to-liquids fuels, i.e., high cetane, zero aromatics and negligible particulate matter. Volvo has announced they will commercialize class 8 trucks using DME in 2015, and staff would like to ensure these trucks have lower NO_x than the existing standard.

Some areas of focus include:

- demonstration of remote sensing technologies to target different high emission applications and sources;
- studies to identify the health risks associated with ultrafines and ambient particulate matter including their composition to characterize their toxicity and determine specific combustion sources;
- in-use emissions studies using biofuels including DME to evaluate in-use emission composition;
- in-use emissions studies to determine the impact of new technologies, in particular PEVs on local air quality as well as the benefit of telematics on emissions reduction strategies; and
- lifecycle energy and emissions analyses to evaluate conventional and alternative fuels.

Stationary Clean Fuel Technologies

Although stationary source emissions are small compared to mobile sources in the South Coast Air Basin, there are areas where cleaner fuel technology can be applied to reduce NO_x, VOC and PM emissions. For example, inspections suggest there is a large population of small ICE generators within the Basin that are operating outside their permit limits due to poor maintenance, deliberate tuning for different performance, operation outside equipment design or changes in fuel quality. Cleaner, more robust distributed generation technologies exist that could be applied to not only improve air quality, but enhance power quality and reduce electricity distribution congestion.

The use of renewable feedstocks for energy production is a viable and necessary strategy to provide sustainable power for future needs while reducing greenhouse gas emissions and achieving domestic energy diversity. One of the projects that the SCAQMD recently supported in this effort was a bench scale demonstration project using a steam hydrogasification process to produce natural gas from biomass and biosolid (sewage sludge) feedstocks. Steam Hydrogasification Reaction (SHR) has been developed to produce various forms of energy products from carbonaceous resources. SHR is capable of handling wet feedstocks like sludge, does not require expensive oxygen plants and has been demonstrated to be most efficient and cost-effective compared to other conventional gasification technologies. This project successfully demonstrated that the SHR process coupled with a water-gas shift (WGS) reactor can produce natural gas containing up to 90% methane.

Projects conducted under this category may include:

- development and demonstration of reliable, low emission stationary technologies (e.g., low NO_x burners, fuel cells or microturbines);
- exploration of renewables as a source for cleaner stationary technologies; and
- evaluation, development and demonstration of advanced control technologies for stationary sources.

Target Allocations to Core Technology Areas

Figure 17 below presents the potential allocation of available funding, based on SCAQMD projected program costs of nearly \$16.4 million for all potential projects. The expected actual project expenditures for 2014 will be less than the total SCAQMD projected program cost since not all projects will materialize. The target allocations are based on balancing technology priorities, technical challenges and opportunities discussed previously and near-term versus long-term benefits with the constraints on available SCAQMD funding. Specific contract awards throughout 2014 will be based on this proposed allocation, the quality of proposals received and evaluation of projects against standardized criteria and ultimately SCAQMD Governing Board approval.

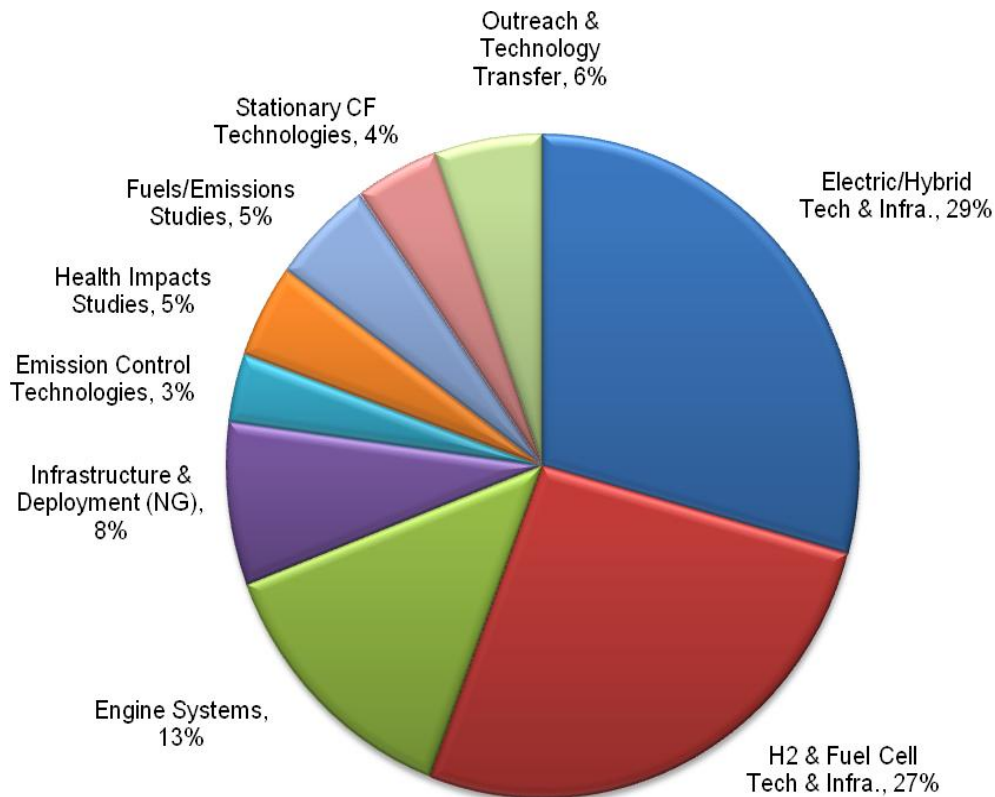


Figure 17: Projected Cost Distribution for Potential SCAQMD Projects 2014 & Beyond (\$16.4M)

PROGRAM PLAN UPDATE FOR 2014

This section presents the Clean Fuels Program Plan Update for 2014. The proposed projects are organized by program areas and described in further detail, consistent with the SCAQMD budget, priorities and the best available information. Although not required, this Plan also includes proposed projects that may be funded by revenue sources other than the Clean Fuels Program, specifically related to VOC and incentive projects.

Table 7 summarizes potential projects for 2014 as well as the redistribution of SCAQMD costs in some areas as compared to 2013. The funding allocation continues the focus toward development and demonstration of zero and near-zero emission technologies including the infrastructure for such technologies. However, while the SCAQMD had over the last couple of years emphasized electric and hybrid-electric technologies, the intent is to allow the projects in this core technology area to achieve some progress while the Program is slightly re-calibrated to focus on the current federal and state activity in hydrogen and fuel cells and the anticipated roll out of fuel cell vehicles in the next couple of years. Additionally, a significant heavy-duty engine project was recently funded so some emphasis has been adjusted in light of that project currently getting underway as well as awards over the last couple of years in other technology areas, both those made by SCAQMD as well as state and federal awards. The funding allocations continue to align well with the SCAQMD's FY 2013-14 Goals and Priority Objectives. Overall, the Program is designed ensure a broad portfolio of technologies and leverage state and federal efforts.

Each of the proposed projects described in this Plan, once fully developed, will be presented to the SCAQMD Governing Board for approval prior to contract initiation. This development reflects the maturity of the proposed technology, identification of contractors to perform the projects, host site participation, securing sufficient cost-sharing to complete the project and other necessary factors. Recommendations to the SCAQMD Governing Board will include descriptions of the technology to be demonstrated and in what application, the proposed scope of work of the project and the capabilities of the selected contractor and project team, in addition to the expected costs and expected benefits of the projects as required by H&SC 40448.5.1.(a)(1). Based on communications with all of the organizations specified in H&SC 40448.5.1.(a)(2) and review of their programs, the projects proposed in this Plan do not appear to duplicate any past or present projects.

Funding Summary of Potential Projects

The remainder of this section contains the following information for each of the potential projects summarized in Table 7.

Proposed Project: A descriptive title and a designation for future reference.

Expected SCAQMD Cost: The estimated proposed SCAQMD cost share as required by H&SC 40448.5.1.(a)(1).

Expected Total Cost: The estimated total project cost including the SCAQMD cost share and the cost share of outside organizations expected to be required to complete the proposed project. This is an indication of how much SCAQMD public funds are leveraged through its cooperative efforts.

Description of Technology and Application: A brief summary of the proposed technology to be developed and demonstrated, including the expected vehicles, equipment, fuels, or processes that could benefit.

Potential Air Quality Benefits: A brief discussion of the expected benefits of the proposed project, including the expected contribution towards meeting the goals of the AQMP, as required by H&SC 40448.5.1.(a)(1). In general, the most important benefits of any technology research, development

and demonstration program are not necessarily realized in the near term. Demonstration projects are generally intended to be proof-of-concept for an advanced technology in a real-world application. While emission benefits, for example, will be achieved from the demonstration, the true benefits will be seen over a longer term, as a successfully demonstrated technology is eventually commercialized and implemented on a wide scale.

Table 7: Summary of Potential Projects for 2014

| Proposed Project | Expected SCAQMD Cost \$ | Expected Total Cost \$ |
|--|--------------------------------|-------------------------------|
| Electric/Hybrid Technologies & Infrastructure | | |
| Demonstrate Light-Duty Plug-In Hybrid & Battery Electric Vehicles and Infrastructure | 500,000 | 1,000,000 |
| Develop and Demonstrate Medium- and Heavy-Duty Hybrid Vehicles and Infrastructure | 1,000,000 | 3,000,000 |
| Demonstrate Alternative Energy Storage | 300,000 | 2,000,000 |
| Develop and Demonstrate Electric Container Transport Technologies | 3,000,000 | 5,000,000 |
| Subtotal | \$4,800,000 | \$11,000,000 |
| Engine Systems | | |
| Develop and Demonstrate Advanced Alternative Fuel Medium- and Heavy-Duty Engines and Vehicles | 2,000,000 | 20,000,000 |
| Develop and Demonstrate Alternative Fuel and Clean Conventional Fueled Light-Duty Vehicles | 200,000 | 1,500,000 |
| Subtotal | \$2,200,000 | \$21,500,000 |
| Hydrogen and Fuel Cell Technologies and Infrastructure | | |
| Develop and Demonstrate Operation and Maintenance Business Case Strategies for Hydrogen Stations | 350,000 | 4,000,000 |
| Develop and Demonstrate Distributed Hydrogen Production and Fueling Stations | 2,000,000 | 6,000,000 |
| Develop and Demonstrate Fuel Cell Vehicles | 2,000,000 | 6,000,000 |
| Subtotal | \$4,350,000 | \$16,000,000 |
| Infrastructure and Deployment (NG) | | |
| Deploy Natural Gas Vehicles in Various Applications | 500,000 | 2,000,000 |
| Develop, Maintain & Expand Natural Gas Infrastructure | 300,000 | 2,000,000 |
| Demonstrate Natural Gas Manufacturing and Distribution Technologies Including Renewables | 500,000 | 7,000,000 |
| Subtotal | \$1,300,000 | \$11,000,000 |
| Emission Control Technologies | | |
| Develop and Demonstrate Advanced Aftertreatment Technologies | 300,000 | 5,000,000 |
| Demonstrate On-Road Technologies in Off-Road and Retrofit Applications | 250,000 | 1,000,000 |
| Subtotal | \$550,000 | \$6,000,000 |
| Fuels/Emission Studies | | |
| In-Use Emissions Studies for Advanced Technology Vehicle Demonstrations | 500,000 | 1,000,000 |
| Conduct Emissions Studies on Biofuels and Alternative Fuels | 100,000 | 1,300,000 |

Table 7: Summary of Potential Projects for 2014 (cont'd)

| Proposed Project | Expected SCAQMD Cost \$ | Expected Total Cost \$ |
|---|-------------------------------|---------------------------|
| Fuels/Emission Studies (cont'd) | | |
| Identify and Demonstrate In-Use Fleet Emissions Reduction Technologies & Opportunities | 250,000 | 2,000,000 |
| Subtotal | \$850,000 | \$4,300,000 |
| Health Impacts Studies | | |
| Evaluate Ultrafine Particle Health Effects | 250,000 | 3,000,000 |
| Conduct Monitoring to Assess Environmental Impacts | 250,000 | 1,000,000 |
| Assess Sources and Health Impacts of Particulate Matter | 250,000 | 300,000 |
| Subtotal | \$750,000 | \$4,300,000 |
| Stationary Clean Fuel Technologies | | |
| Develop and Demonstrate Reliable, Low Emission Monitoring Systems and Test Methods | 250,000 | 500,000 |
| Develop and Demonstrate Clean Stationary Technologies | 250,000 | 750,000 |
| Develop and Demonstrate Renewables-Based Energy Generation Alternatives | 200,000 | 1,000,000 |
| Subtotal | \$700,000 | \$2,250,000 |
| Outreach and Technology Transfer | | |
| Assessment and Technical Support of Advanced Technologies and Information Dissemination | 500,000 | 800,000 |
| Support for Implementation of Various Clean Fuels Vehicle Incentive Programs | 400,000 | 400,000 |
| Subtotal | \$900,000 | \$1,200,000 |
| TOTALS FOR POTENTIAL PROJECTS | \$16,400,000 | \$77,550,000 |

Technical Summaries of Potential Projects

Electric/Hybrid Technologies & Infrastructure

Proposed Project: Demonstrate Light-Duty Plug-In Hybrid & Battery Electric Vehicles and Infrastructure

Expected SCAQMD Cost: \$500,000

Expected Total Cost: \$1,000,000

Description of Technology and Application:

All of the major automobile manufacturers are currently developing and commercializing hybrid-electric vehicles, which now come in a variety of fuel economy and performance options. These commercial hybrid EVs integrate a smaller internal combustion engine, battery pack and electric drive motors to improve fuel economy (e.g., Chevy Volt) or performance (e.g., Lexus RX400h).

The SCAQMD has long supported the concept of using increased battery power to allow a portion of the driving cycle to occur in all-electric mode for true zero emission miles. This battery dominant strategy is accomplished by incorporating an advanced battery pack initially recharged from the household grid or EV chargers. This “plug-in” hybrid EV strategy allows reduced emissions and improved fuel economy. In 2009, CARB adopted Plug-In Hybrid Electric Vehicle Test Procedure Amendments and Aftermarket Parts Certification and several automobile manufacturers have announced demonstration or early production plans of “blended” plug-in hybrid electric, extended-range electric vehicles (E-rEV), or highway capable battery electric vehicles (BEVs). Electric utilities refer to PHEVs, E-rEVs and BEVs as plug-in electric drive vehicles (PEVs) and are working with automakers to support PEVs. The recent adoption of revised recommended practice SAE J1772 will enable vehicles to charge from 120V (Level 1) or 240V (Level 2) using a common conductive connector overnight or in a few hours. Japan has adopted a Fast DC charging standard that could charge a passenger car in 30 minutes or less, and demonstrations will help provide data to adopt a recommended practice in the U.S.

Integrated programs can interconnect fleets of electric drive vehicles with mass transit via web-based reservation systems that allow multiple users. These integrated programs can match the features of EVs (zero emissions, zero start-up emissions, short range) to typical consumer demands for mobility in a way that significantly reduces emissions of pollutants and greenhouse gases.

At recent auto shows, automakers have displayed concept plug-in fuel cell vehicles. Development and demonstration of dual fuel, zero emission vehicles could expand the acceptance of battery electric vehicles and accelerate the introduction of fuel cells in vehicle propulsion.

This project category is to develop and demonstrate: 1) various PEV architectures; 2) anticipated costs for such architectures; 3) customer interest and preferences for each alternative; 4) prospective commercialization issues and strategies for various alternatives; 5) integration of the technologies into prototype vehicles and fleets; 6) infrastructure (especially in conjunction with the DOE and the Los Angeles Department of Water & Power) to demonstrate the potential clean air benefits of these types of vehicles; and 7) support for local government outreach and charging installation permit streamlining.

Potential Air Quality Benefits:

The 2012 AQMP identifies zero- or near-zero emitting vehicles as a key attainment strategy. HEV technologies have the potential to achieve near-zero emissions but with the range of a conventional gasoline-fueled vehicle, a factor expected to enhance consumer acceptance. Given the variety of PEV systems under development, it is critical to determine the true emissions and performance of PEVs. Demonstration of optimized prototypes would enhance the deployment of near-ZEV and ZEV technologies.

Expected benefits include the establishment of criteria for emissions evaluations, performance requirements, customer acceptability of the technology, etc. This will help both regulatory agencies and OEMs to expedite introduction of near-zero and zero-emitting vehicles in the South Coast Basin, which is a high priority of the AQMP.

Proposed Project: Develop and Demonstrate Medium- and Heavy-Duty Hybrid Vehicles and Infrastructure

Expected SCAQMD Cost: \$1,000,000

Expected Total Cost: \$3,000,000

Description of Technology and Application:

Hybrid technologies have gained momentum in the light-duty sector with commercial offerings by most all of the automobile manufacturers. Unfortunately, the medium- and heavy-duty platforms are where most emissions reductions are required, especially for the in-use fleet due to low turnover. This project category is to investigate the use of hybrid technologies to achieve similar performance as the conventional fueled counterparts while achieving both reduced emissions and improved fuel economy. Development and validation of emission test procedures is needed, but is complicated due to the low volume and variety of medium- and heavy-duty vehicles.

Platforms to be considered include utility trucks, delivery vans, shuttle buses, transit buses, waste haulers, construction equipment, cranes and other off-road vehicles. Innovations that may be considered for demonstration include: advancements in the auxiliary power unit, either ICE or other heat engine; battery-dominant hybrid systems utilizing off-peak re-charging, with advanced battery technologies such as lithium-ion; and hydraulic energy storage technologies where applicable. Alternative fuels are preferred in these projects, e.g., natural gas, LPG, hydrogen, GTL and hydrogen-natural gas blends, but conventional fuels such as gasoline, clean diesel, or even biodiesel may be considered if the emissions benefits can be demonstrated as equivalent or superior to alternative fuels. Both new designs and retrofittable technologies and related charging infrastructure will be considered.

Federal recovery act funding combined with state and local support has accelerated the development and demonstration of medium-duty plug-in hybrid electric truck platforms. Analysis of project data and use profiles will help optimize drive systems, target applications for early commercialization and fill gaps in product offerings.

Potential Air Quality Benefits:

The 2012 AQMP identifies zero- or near-zero emitting vehicles as a key attainment strategy. Hybrid technologies have the potential to redirect previously wasted kinetic energy into useable vehicle power. This proposed project category will evaluate various hybrid systems and fuel combinations to identify their performance and emissions benefits. Given the variety of hybrid systems under development, it is critical to determine the true emissions and performance of these prototypes, especially if both emissions and fuel economy advantages are achieved.

Expected benefits include the establishment of criteria for emissions evaluations, performance requirements and customer acceptability of the technology. This will help both regulatory agencies and OEMs to expedite introduction of near-zero emitting vehicles in the South Coast Basin, which is a high priority of the AQMP.

Proposed Project: Demonstrate Alternative Energy Storage

Expected SCAQMD Cost: \$300,000

Expected Total Cost: \$2,000,000

Description of Technology and Application:

The SCAQMD has been involved in the development and demonstration of energy storage systems for electric and hybrid-electric vehicles, mainly Lithium ion chemistry battery packs. Over the past few years, additional technology consisting of nickel sodium chloride, lithium-ion and lithium iron phosphate batteries have shown robust performance. Other technology manufacturers have also developed energy storage devices including flywheels, hydraulic systems and ultracapacitors. Energy storage systems optimized to combine the advantages of ultracapacitors and advanced batteries could yield further benefits. This project category is to apply these advanced storage technologies in vehicle platforms to identify best fit applications, demonstrate their viability (reliability, maintainability and durability), gauge market preparedness and provide a pathway to commercialization.

The long-term objective of this program is to decrease fuel consumption and resulting emissions without any changes in performance compared to conventional vehicles. This program will support several projects for development and demonstration of different types of low emission hybrid vehicles using advanced energy strategies and conventional or alternative fuels. The overall net emissions and fuel consumption of these types of vehicles are expected to be much lower than traditional engine systems. Both new and retrofit technologies will be considered.

Potential Air Quality Benefits:

Certification of low emission vehicles and engines and their integration into the Basin's transportation sector is a high priority under the 2012 AQMP. This program is expected to develop alternative energy storage technologies that could be implemented in medium- and heavy-duty trucks, buses and other applications. Benefits will include proof of concept for the new technologies, diversification of transportation fuels and lower emissions of criteria, toxic pollutants and greenhouse gases.

Proposed Project: Develop and Demonstrate Electric Container Transport Technologies

Expected SCAQMD Cost: \$3,000,000

Expected Total Cost: \$5,000,000

Description of Technology and Application:

Advanced transportation systems can be used to transfer cargo containers from ports to both local and “distant” intermodal facilities, thereby significantly reducing emissions from on-road trucks and locomotives and also reducing traffic congestion in local transportation corridors. Such systems could be stand-alone systems that use magnetic levitation (maglev), linear synchronous motors or linear induction motors on dedicated guideways. A more near-term design could use existing roadways that are electrified with catenary electric lines or linear electric motors to move containers on modified trucks equipped to run on electricity. In both scenarios, containers are transported relatively quietly and without direct emissions. The footprints for such systems are similar to conventional rail systems but have reduced impact on adjacent property owners including noise and fugitive dust. These systems can even be built above or adjacent to freeways or on elevated guideways. These container freight systems are not designed to carry any operators on the guideways, where the over-the-roadway system may require the operator to actively control the transport of the containers.

One of the container transportation concepts the SCAQMD is actively pursuing is the eHighway catenary hybrid truck system by Siemens Mobility. Siemens and their partners have developed a catenary system and hybrid electric trucks to utilize the catenary for zero emission transport of containers. The hybrid drive system will extend the operating range of the truck beyond the all-electric range of the catenary system, thus enabling the truck to perform regional drayage operations and bridge gaps in catenary infrastructure as it is deployed on a regional level. The proposed Siemens pantograph system will allow for seamless connection and disconnection from the catenary wires. When entering the catenary system corridor, the pantograph system will verify the presence of catenary lines and allow the driver to raise the pantograph from within the cab of the truck. Upon leaving the catenary system, the pantograph automatically retracts and the truck switches to on-board power systems. The on-board power systems could be a range of technologies, including batteries, fuel cells, or internal combustion engines. In addition, SCAQMD is administering a project to develop and demonstrate zero emission drayage trucks for goods movement operations, consisting of three different battery electric truck technologies and a fuel cell hybrid electric truck platform. This project is funded by a \$4.2 million award from Department of Energy to promote the deployment of zero emission cargo transport technologies. These trucks can be also upfitted to connect to wayside power via a catenary or LSM system in the future.

In addition to these technologies, there are other options for electric container applications such as dual-mode locomotives, hybrid electric technologies with battery storage, a battery tender car, magnetic levitation, and fuel cell propulsion system. This program will evaluate all available technology options to determine whether their systems can be successfully developed and deployed, financially viable, and reliably operated on a long-term basis.

Potential Air Quality Benefits:

On-road heavy-duty diesel truck travel is an integral part of operations at the ports moving cargo containers into the Basin and beyond. The 2012 AQMP proposes to reduce emissions from this

activity by modernizing the fleet and retrofitting NO_x and PM emission controls on older trucks. An alternative approach, especially for local drayage to the nearby intermodal facilities, is to use advanced container transport systems that use electric propulsion for the containers on fixed guideways or modified trucks able to operate on electricity which will eliminate local diesel truck emissions. The emission benefits have not yet been estimated because the fate of the displaced trucks has not been determined.

Engine Systems

Proposed Project: Develop and Demonstrate Advanced Alternative Fuel Medium- and Heavy-Duty Engines and Vehicles

Expected SCAQMD Cost: \$2,000,000

Expected Total Cost: \$20,000,000

Description of Technology and Application:

The objective of this proposed program is to support development and certification of near commercial prototype low emission heavy-duty alternative fuel engine technologies and demonstration of these technologies in on-road vehicles. The NO_x emissions target for this program area is 0.2 g/bhp-hr and lower and the PM emissions target is below 0.01 g/bhp-hr. To achieve these targets, an effective emission control strategy must employ advance fuel or alternative fuels, engine design features, improved exhaust or recirculation systems, and aftertreatment devices that are optimized using a system approach. This program is expected to result in several projects, including:

- demonstration of advanced engines in medium-duty and heavy-duty vehicles;
- development of durable and reliable retrofit technologies to convert engines and vehicles from petroleum fuels to alternative fuels; and
- anticipated fuels for these projects include but are not limited to CNG, LNG, LPG, emulsified diesel and GTL fuels. The program proposes to expand field demonstration of these advanced technologies in various vehicle fleets operating with different classes of vehicles.

The use of alternative fuel in heavy-duty trucking applications has been demonstrated in certain local fleets within the Basin. These vehicles typically require 200-300 horsepower engines. Higher horsepower alternative fuel engines are beginning to be introduced. However, vehicle range, lack of experience with alternative fuel engine technologies and limited selection of appropriate alternative fuel engine products have made it difficult for more firms to consider significant use of alternative fuel vehicles. For example, in recent years, several large trucking fleets have expressed interest in using alternative fuels. However, at this time the choice of engines over 350 HP or more is limited. Continued development of cleaner dedicated natural gas or other alternative fuel engines such as natural gas-hydrogen blends over 350 HP would increase availability to end-users and provide additional emission reductions.

Potential Air Quality Benefits:

This program is intended to expedite the commercialization of low emission alternative fuel heavy-duty engine technology in California, both in the Basin and in intrastate operation. The emission reduction benefit of replacing one 4.0 g/bhp-hr heavy-duty engine with a 0.2 g/bhp-hr engine in a vehicle that consumes 10,000 gallons of fuel per year is about 1400 lb/yr of NO_x. Clean alternative fuels, such as natural gas, or natural gas blends with hydrogen can also reduce heavy-duty engine particulate emissions by over 90 percent compared to current diesel technology. This program is expected to lead to increased availability of low emission alternative fuel heavy-duty engines. Fleets can use the engines and vehicles emerging from this program to comply with SCAQMD fleet regulations.

Proposed Project: Develop and Demonstrate Alternative Fuel and Clean Conventional Fueled Light-Duty Vehicles

Expected SCAQMD Cost: \$200,000

Expected Total Cost: \$1,500,000

Description of Technology and Application:

Although new conventional fueled vehicles are much cleaner than their predecessors, not all match the lowest emissions standards often achieved by alternative fuel vehicles. This project would assist in the development, demonstration and certification of both alternative-fueled and conventional-fueled vehicles to meet the strictest emissions requirements by the state, e.g., SULEV for light-duty vehicles. The candidate fuels include CNG, LPG, ethanol, GTL, clean diesel, bio-diesel and ultra low-sulfur diesel, and compressed air technologies. The potential vehicle projects may include:

- certification of CNG light-duty sedans and pickup trucks used in fleet services;
- resolution of higher concentration ethanol (E-85) affect on vehicle fueling system (“permeation issue”);
- certification of E85 vehicles to SULEV standards;
- assessment of “clean diesel” vehicles, including hybrids and their ability to attain SULEV standards; and
- assessment of compressed air technologies.

Other fuel and technology combinations may also be considered under this category.

Potential Air Quality Benefits:

The 2012 AQMP identifies the use of alternative clean fuels in mobile sources as a key attainment strategy. Pursuant to AQMP goals, the SCAQMD has in effect several fleet rules that require public and certain private fleets to purchase clean-burning alternative-fueled vehicles when adding or replacing vehicles to their vehicle fleets. This program is expected to lead to increased availability of low emission alternative-and conventional-fueled vehicles for fleets as well as consumer purchase.

Hydrogen and Fuel Cell Technologies & Infrastructure

Proposed Project: Develop and Demonstrate Operation and Maintenance Business Case Strategies for Hydrogen Stations

Expected SCAQMD Cost: \$350,000

Expected Total Cost: \$4,000,000

Description of Technology and Application:

California regulations require automakers to place increasing numbers of zero emission vehicles into service every year. By 2050, CARB projects that 87% of light-duty vehicles on the road will be zero emission battery and fuel cell vehicles with fuel cell electric becoming the dominant powertrain.

In mid-2012 the CaFCP published a roadmap describing the first network of commercial hydrogen stations in California. The roadmap states that by 2016, 68 hydrogen fueling stations in cluster communities and at specific destinations will provide coverage for the first 20,000 FCEV owners in California. Stakeholders estimate 37 stations will be funded and operating in 2015, leaving a gap of 31 needed stations. The cost for these 31 stations is estimated to be approximately \$65 million. The cost-estimates for these stations were based on a “cash-flow” analysis whereby the state would ensure the station operators would not be financially penalized for opening a hydrogen station. This model, however, makes assumptions based on a fuel retailers’ perspective, including the station operator is able to secure financing, the size of stations, the cost of rent for the land and other factors. The analysis did not identify, however, the implementation of such a system.

This project category would evaluate the actual implementation of a “cash-flow” system, the willingness of banks to grant loans, the strategy to assess the cash-flow “gap”, and other implementation challenges for such a system.

Potential Air Quality Benefits:

The 2012 AQMP identifies the use of alternative fuels and zero emission transportation technologies as necessary to meet federal air quality standards. One of the major advantages of Fuel Cell vehicles (FCEVs) is the fact that they use hydrogen, a fuel that can be domestically produced from a variety of resources such as natural gas, solar, wind and biomass. The technology and means to produce hydrogen fuel to support FCEVs are available now. The deployment of large numbers of FCEVs, which is an important strategy to attain air quality goals, requires a well planned and robust hydrogen fueling infrastructure. This SCAQMD program with additional funding from other entities will provide the hydrogen fueling infrastructure that is necessary in the South Coast Air Basin. The deployment of FCEVs and the development of the necessary fueling infrastructure will lead to substantial reductions in NO_x, VOC, CO, PM and toxic air contaminants from vehicles.

Proposed Project: Develop and Demonstrate Distributed Hydrogen Production and Fueling Stations

Expected SCAQMD Cost: \$2,000,000

Expected Total Cost: \$6,000,000

Description of Technology and Application:

Alternative fuels, such as hydrogen and the use of advanced technologies, such as fuel cell vehicles, are necessary to meet future clean air standards. A key element in the widespread acceptance and resulting increased use of alternative fuel vehicles is the development of an infrastructure to support the refueling of vehicles, cost-effective production and distribution and clean utilization of these new fuels.

A major challenge to the entry and acceptance of direct-hydrogen fuel cell vehicles is the limited number of hydrogen refueling sites. This program would support the development and demonstration of hydrogen refueling technologies. Proposed projects would address:

- *Fleet and Commercial Refueling Stations:* Further expansion of the hydrogen fueling network based on retail models, providing renewable generation, adoption of standardized measurements for hydrogen refueling, other strategic refueling locations and increased dispensing pressure of 10,000 psi and compatibility with existing CNG stations may be considered.
- *Energy Stations:* Multiple-use energy stations that can produce hydrogen for fuel cell vehicles or for stationary power generation are considered an enabling technology with the potential for costs competitive with large-scale reforming. System efficiency, emissions, hydrogen throughput, hydrogen purity and system economics will be monitored to determine the viability of this strategy for hydrogen fueling infrastructure deployment and as a means to produce power and hydrogen from renewable feedstocks (biomass, digester gas, etc.).

Home Refueling Appliances: Home refueling/recharging is an attractive advancement for alternative clean fuels due to the limited conventional refueling infrastructure. Similar to the natural gas home refueling appliance currently commercially available, this project would evaluate a hydrogen home refueler for cost, compactness, performance, durability, emission characteristics, ease of assembly and disassembly, maintenance and operations. Other issues such as building permits, building code compliance and UL ratings for safety would also be evaluated.

It is estimated that approximately 50,000 fuel cell vehicles will be deployed by 2017 in California and the majority of these vehicles will be in the South Coast Air Basin. To provide fuel for these vehicles, the hydrogen fueling infrastructure needs to be significantly increased. SCAQMD will seek additional funding from CEC and CARB to construct and operate hydrogen fueling stations.

Potential Air Quality Benefits:

The 2012 AQMP identifies the use of alternative clean fuels in mobile sources as a key attainment strategy. Pursuant to AQMP goals, the SCAQMD has in effect several fleet rules that require public and certain private fleets to purchase clean-burning alternative-fueled vehicles when adding or replacing vehicles to their vehicle fleets. Fuel cell vehicles constitute the cleanest alternative-fuel vehicles today. Since hydrogen is a key fuel for fuel cell vehicles, this program would address some of the barriers faced by hydrogen as a fuel and thus assist in accelerating its acceptance and ultimate commercialization. In addition to supporting the immediate deployment of the demonstration fleet, expanding the hydrogen fuel infrastructure should contribute to the

market acceptance of fuel cell technologies in the long run, leading to substantial reductions in NO_x, VOC, CO, PM and toxic compound emissions from vehicles.

Proposed Project: Develop and Demonstrate Fuel Cell Vehicles

Expected SCAQMD Cost: \$2,000,000

Expected Total Cost: \$6,000,000

Description of Technology and Application:

This proposed project would support the demonstration of promising fuel cell technologies for applications using direct hydrogen with proton exchange membrane (PEM) fuel cell technology. Battery fuel cell hybrids are another potential technology being mentioned by battery experts as a way of reducing costs and enhancing performance of fuel cell vehicles.

With the implementation of the California Hydrogen Highway Network, supplemented by the existing and planned hydrogen refueling stations in the Southern California area, pre-production vehicles are planned for demonstration in controlled fleets, such as local cities, transit authorities and airports. Some of these pre-production vehicles include light-duty trucks as well as small to full size transit and shuttle buses. Fleets are useful demonstration sites because economies of scale exist in central refueling, in training skilled personnel to operate and maintain the vehicles, in the ability to monitor and collect data on vehicle performance and for manufacturer technical and customer support. These vehicles could include hybrid-electric vehicles powered by fuel cells and equipped with batteries capable of being charged from the grid and even supplying power to the grid. This category may include projects in the following applications:

On-Road:

- Light-Duty Vehicles
- Transit Buses
- Shuttle Buses
- Medium- & Heavy-Duty Trucks
(Utility or Other)

Off-Road:

- Vehicle Auxiliary Power Units
- Construction Equipment
- Lawn and Garden Equipment
- Cargo Handling Equipment

Potential Air Quality Benefits:

The 2012 AQMP identifies the need to implement zero emission vehicles. SCAQMD adopted fleet regulations require public and some private fleets within the Basin to acquire alternatively fueled vehicles when making new purchases. In the future, such vehicles could be powered by zero emission fuel cells operating on hydrogen fuel. The proposed projects have the potential to accelerate the commercial viability of fuel cell vehicles. Expected immediate benefits include the establishment of zero- and near-zero emission proof-of-concept vehicles in numerous applications. Over the longer term, the proposed projects could help foster wide-scale implementation of zero emission fuel cell vehicles in the Basin. The proposed projects could also lead to significant fuel economy improvements, manufacturing innovations and the creation of high-tech jobs in Southern California, besides realizing the air quality benefits projected in the AQMP.

Infrastructure and Deployment (NG)

Proposed Project: Deploy Natural Gas Vehicles in Various Applications

Expected SCAQMD Cost: \$500,000

Expected Total Cost: \$2,000,000

Description of Technology and Application:

Natural gas vehicles (NGVs) have been very successful in reducing emissions in the South Coast Air Basin due to the deployment of fleets and heavy-duty vehicles utilizing this clean fuel. In order to maintain the throughput, utility and commercial potential of the natural gas infrastructure and the corresponding clean air benefits, deploying additional models of NGVs in existing applications are needed. This technology category seeks to support the implementation of early-commercial vehicles in a wide variety of applications, such as taxis, law enforcement vehicles, shuttle buses, delivery vans, transit buses, waste haulers, class 8 tractors and off-road equipment such as construction vehicles and yard hostlers.

Potential Air Quality Benefits:

Natural gas vehicles have inherently lower engine criteria pollutant emissions than conventional vehicles, especially in the heavy-duty applications where older diesel engines are being replaced. Incentivizing these vehicles in city fleets, goods movement applications and transit bus routes help to reduce the local emissions and exposure to nearby residents. Natural gas vehicles also can have lower greenhouse gas emissions and increase energy diversity depending on the feedstock and vehicle class. Deployment of additional NGVs is in agreement with SCAQMD's AQMP as well as the state's Alternative Fuels Plan as part of AB 1007 (Pavley).

Proposed Project: Develop, Maintain & Expand Natural Gas Infrastructure

Expected SCAQMD Cost: \$300,000

Expected Total Cost: \$2,000,000

Description of Technology and Application:

This program would support the development, maintenance and expansion of natural gas fueling station technologies and incorporate advancing concepts to increase the overall number of such fueling stations in strategic locations throughout the Basin including the Ports, reduce the cost of natural gas equipment, standardize fueling station design and construction and help with the implementation of SCAQMD's fleet rules. As natural gas fueling equipment begins to age or has been placed in demanding usage, components begin to age and deteriorate. This program offers an incentive to facilities to replace worn-out equipment or to upgrade existing fueling and/or garage and maintenance equipment to offer increased fueling capacity to public agencies, private fleets and school districts.

Potential Air Quality Benefits:

The AQMP identifies the use of alternative clean fuels in mobile sources as a key attainment strategy. NGVs have significantly lower emissions than gasoline vehicles and represent the cleanest internal combustion engine powered vehicles available today. The project has the potential to significantly reduce the installation and operating costs of NGV refueling stations, besides improving the refueling time. While new or improved NGV stations have an indirect emissions reduction benefit, they help facilitate the introduction of low emission, NGVs in private and public fleets in the area, which have a direct emissions reduction benefit. The increased exposure and fleet and consumer acceptance of NGVs would lead to significant and direct reductions in NO_x, VOC, CO, PM and toxic compound emissions from mobile sources. Such increased penetration of NGVs will provide direct emissions reductions of NO_x, VOC, CO, PM and air toxic compounds throughout the Basin.

Proposed Project: Demonstrate Natural Gas Manufacturing and Distribution Technologies Including Renewables**Expected SCAQMD Cost:** \$500,000**Expected Total Cost:** \$7,000,000**Description of Technology and Application:**

Lack of sufficient statewide LNG production results in increased fuel costs and supply constraints. The cost of transporting LNG from production facilities out-of-state increases the fuel cost anywhere from 15 to 20 cents per gallon of LNG and subjects users to the reliability of a single supply source. High capital costs prevent construction of closer, large scale liquefaction facilities. Small-scale, distributed LNG liquefaction systems may provide 25 percent lower capital costs than conventional technology per gallon of LNG produced. Because these smaller plants can be sited near fleet customers, costs for transporting the LNG to end users are much lower than those for remote larger plants. Beyond these cost reductions, the smaller plants offer key benefits of much smaller initial capital investment and wider network of supply than the larger plant model. Renewable feed stocks including landfill gas, green waste and waste gases can be processed to yield LNG or CNG.

Industry and government agree that LNG promises to capture a significant share of the heavy-duty vehicle and engine market. LNG is preferred for long distance trucking as it provides twice the energy per unit volume as CNG. This translates to longer driving ranges and lower-weight vehicle fuel storage.

The main objectives of this project are to investigate, develop and demonstrate:

- commercially viable methods for converting renewable feed stocks into CNG or LNG (e.g., production from biomass);
- economic small-scale natural gas liquefaction technologies;
- utilization of various gaseous feed stocks locally available;
- commercialize incentives for fleets to site, install and use LNG and L/CNG refueling facilities; and
- strategic placement of LNG storage capacity sufficient to provide supply to users in the event of a production outage.

Potential Air Quality Benefits:

The SCAQMD relies on a significant increase in the penetration of zero- and low emission vehicles in the South Coast Basin to attain federal clean air standards by 2014, 2023 and 2032. This project would help develop a number of small-scale liquefaction technologies that can reduce LNG costs to be competitive with diesel fuel. Such advances are expected to lead to greater infrastructure development. This would make LNG fueled heavy-duty vehicles more available to the commercial market leading to direct reductions in NO_x, PM and toxic compound emissions.

Emission Control Technologies

Proposed Project: Develop and Demonstrate Advanced Aftertreatment Technologies

Expected SCAQMD Cost: \$300,000

Expected Total Cost: \$5,000,000

Description of Technology and Application:

There are a number of aftertreatment technologies which have shown substantial emission reductions in diesel engines. These technologies include diesel particulate filters (DPFs), oxidation catalysts, selective catalytic reduction (SCR) systems and NO_x adsorbers. This project category is to develop and demonstrate these aftertreatment technologies alone or in tandem with an alternative fuel to produce the lowest possible PM, ultrafine particles, nanoparticles, NO_x, CO, carbonyl and hydrocarbon emissions in retrofit and new applications. With the increasing focus on zero- and near-zero emission goods movement technologies, this category should examine idle reduction concepts and technologies that can be employed at ports and airports.

Possible projects include advancing the technologies for on-road retrofit applications such as heavy-duty line-haul diesel engines, street sweepers, waste haulers and transit buses. Applications for non-road may include construction equipment, yard hostlers, gantry cranes, locomotives, marine vessels, ground support equipment and other similar industrial applications. Potential fuels to be considered in tandem are low-sulfur diesel, emulsified diesel, biodiesel, gas-to-liquids, hydrogen and natural gas. This project category will also explore the performance, economic feasibility, viability (reliability, maintainability and durability) and ease-of-use to ensure a pathway to commercialization.

Potential Air Quality Benefits:

The transfer of mature emission control technologies, such as DPFs and oxidation catalysts, to the off-road sector is a potentially low-risk endeavor that can have immediate emissions reductions. Further development and demonstration of other technologies, such SCR and NO_x adsorbers, could also have NO_x reductions of up to 90%.

Proposed Project: Demonstrate On-Road Technologies in Off-Road and Retrofit Applications**Expected SCAQMD Cost:** \$250,000**Expected Total Cost:** \$1,000,000**Description of Technology and Application:**

Heavy-duty on-road engines have demonstrated progress in meeting increasingly stringent Federal and state requirements. New heavy-duty engines have progressed from 2 g/bhp-hr NO_x in 2004 to 0.2 g/bhp-hr NO_x in 2010, which is an order of magnitude decrease in just six years. Off-road engines, however, have considerably higher emissions limits depending on the engine size. For example, Tier-3 standards for heavy-duty engines require only 3 g/bhp-hr NO_x. There are apparent opportunities to implement cleaner on-road technologies in off-road applications. There is also an opportunity to replace existing engines in both on-road and off-road applications with the cleanest available technology. Current regulations require a repower (engine exchange) to only meet the same emissions standards as the engine being retired. Unfortunately, this does not take advantage of recently developed clean technologies.

Exhaust gas cleanup strategies, such as SCR, electrostatic precipitators, baghouses and scrubbers, have been used successfully for many years on stationary sources. The exhaust from the combustion source is routed to the cleaning technology, which typically requires a large footprint for implementation. This large footprint has made installation of such technologies on some mobile sources prohibitive. However, in cases where the mobile source is required to idle for long periods of time, it may be more effective to route the emissions from the mobile source to a stationary device to clean the exhaust stream.

Projects in this category will include utilizing proven clean technologies in novel applications, such as:

- demonstrating certified LNG and CNG on-road engines in off-road applications including yard hostlers, switcher locomotives, gantry cranes, waste haulers and construction equipment;
- implementing lower emission engines in repower applications for both on-road and off-road applications; and
- application of stationary best available control technologies, such as SCR, scrubbers, baghouses and electrostatic precipitators, to appropriate on- and off-road applications, such as idling locomotives, marine vessels at dock and heavy-duty line-haul trucks at weigh stations.

Potential Air Quality Benefits:

The transfer of mature emission control technologies, such as certified engines and SCR, to the non-road and retrofit sectors offers high potential for immediate emissions reductions. Further development and demonstration of these technologies will assist in the regulatory efforts which could require such technologies and retrofits.

Fuels/Emission Studies

Proposed Project: In-Use Emissions Studies for Advanced Technology Vehicle Demonstrations

Expected SCAQMD Cost: \$500,000

Expected Total Cost: \$1,000,000

Description of Technology and Application:

Hybrid electric, hybrid hydraulic, plug-in electric hybrid and pure EVs will all play a unique role in the future of transportation. Each of these transportation technologies has attributes that could provide unique benefits to different transportation sectors. Identifying the optimal placement of each transportation technology will provide the co-benefits of maximizing the environmental benefit and return on investment for the operator.

The environmental benefit for each technology class will be highly duty-cycle and application specific. Identifying the attributes of a specific application or drive cycle that would take best advantage of a specific transportation technology would speed the adoption and make optimal use of financial resources in the demonstration and deployment of a technology. The adoption rates would be accelerated since the intelligent deployment of a certain technology would ensure that a high percentage of the demonstration vehicles showed positive results. These positive results would spur the adoption of this technology in similar applications, as opposed to negative results derailing the further development or deployment of a certain technology.

The proposed project would conduct a characterization of application specific drive cycles to best match different transportation technologies to specific applications. The potential emissions reductions and fossil fuel displacement for each technology in a specific application would be quantified on a full-cycle basis. This information could be used to develop a theoretical database of potential environmental benefits of different transportation technologies when deployed in specific applications.

Potential Air Quality Benefits:

The development of an emissions reduction database, for various application specific transportation technologies, would assist in the targeted deployment of new transportation technologies. This database coupled with application specific vehicle miles traveled and population data would assist in intelligently deploying advanced technology vehicles to attain the maximum environmental benefit. These two data streams would allow vehicle technologies to be matched to an application that is best suited to the specific technology, as well as selecting applications that are substantial enough to provide a significant environmental benefit. The demonstration of a quantifiable reduction in operating cost through the intelligent deployment of vehicles will also accelerate the commercial adoption of the various technologies. The accelerated adoption of lower emitting vehicles will further assist in attaining SCAQMD's air quality goals.

Proposed Project: Conduct Emissions Studies on Biofuels and Alternative Fuels**Expected SCAQMD Cost:** \$100,000**Expected Total Cost:** \$1,300,000**Description of Technology and Application:**

The use of biofuels can be an important strategy to reduce petroleum dependency, air pollution and greenhouse gas emissions. Biofuels are in fact receiving increased attention due to national support and state activities resulting from AB 32, AB 1007 and the Low-Carbon Fuel Standard. With an anticipated increase in biofuel use, it is the objective of this program to further analyze these fuels to better understand their benefits and impacts not only on greenhouse gases but also on air pollution and associated health effects.

In various diesel engine studies, replacement of petroleum diesel fuel with biodiesel fuel has demonstrated reduced PM, CO and air toxics emissions. Biodiesel also has the potential to reduce greenhouse gas emissions because it can be made from renewable feedstocks, such as soy and canola. However, certain blends of biodiesel have a tendency to increase NO_x emissions, which exacerbates the ozone and PM_{2.5} challenges faced in the Basin. In addition, despite recent advancements in toxicological research in the air pollution field, the relationship between biodiesel particle composition and associated health effects is still not completely understood.

Ethanol is another biofuel that is gaining increased national media and state regulatory attention. CARB has recently amended the reformulated gasoline regulation to further increase the ethanol content to 10% as a means to increase the amount of renewable fuels in the state. It is projected that the state's ethanol use will increase from 900 million gallons in 2007 to 1.5 billion gallons by 2012 as a result. As in the case of biodiesel, ethanol has demonstrated in various emission studies to reduce PM, CO and toxic emissions; however, the relationship between particle composition and associated health effects from the combustion of ethanol is not well understood either.

DME is another fuel which requires evaluation of in-use emissions, especially NO_x, in light of Volvo's announcement that they will commercialize class 8 trucks using DME in 2015. The impact of natural gas fuel composition on emissions from heavy-duty trucks and transit buses is also being studied.

In order to address these concerns on potential health effects associated with biofuels, namely biodiesel and ethanol blends, this program will investigate the physical and chemical composition and associated health effects of tailpipe PM emissions from light- to heavy-duty vehicles burning biofuels in order to ensure public health is not adversely impacted by broader use of these fuels. This program also supports future studies to identify mitigation measures to reduce NO_x emissions for biofuels. Additionally, a study of emissions from well-to-wheel for the extraction and use of shale gas might be considered.

Potential Air Quality Benefits:

If biodiesel and biodiesel blends can be demonstrated to reduce air pollutant emissions with the ability to mitigate any NO_x impact, this technology will become a viable strategy to assist in meeting air pollutant standards as well as the goals of AB 32 and the Low-Carbon Fuel Standard. The use of biodiesel is an important effort for a sustainable energy future. Emission studies are critical to understanding the emission benefits and any tradeoffs (NO_x impact) that may result from using this alternative fuel. With reliable information on the emissions from using biodiesel and biodiesel blends, the SCAQMD can take actions to ensure the use of biodiesel will obtain air pollutant reductions without creating additional NO_x emissions that may exacerbate the Basin's ozone problem.

Proposed Project: Identify and Demonstrate In-Use Fleet Emissions Reduction Technologies and Opportunities

Expected SCAQMD Cost: \$250,000

Expected Total Cost: \$2,000,000

Description of Technology and Application:

New technologies, such as alternative fueled heavy-duty engines, are extremely effective at reducing emissions because they are designed to meet the most stringent emissions standards while maintaining vehicle performance. In addition, many new vehicles are now equipped with telematics enabling motorists to obtain transportation information such as road conditions to avoid excessive idling and track information about the vehicle maintenance needs, repair history, tire pressure and fuel economy. Telematics have been shown to reduce emissions from new vehicles. Unfortunately, the in-use fleet lacks telematic systems--particularly heavy-duty engines in trucks, buses, construction equipment, locomotives, marine vessels and cargo handling equipment--have fairly long working lifetimes (up to 20 years due to remanufacturing in some cases). Even light-duty vehicles routinely have lifetimes exceeding 200,000 miles and 10 years. And it is the in-use fleet, especially the oldest vehicles, which are responsible for the majority of emissions.

This project category is to investigate near-term emissions control technologies which can be economically applied to reduce emissions from the in-use fleet. The first part of the project is to identify and conduct proof-of-concept demonstrations of feasible candidate technologies, such as:

- remote sensing for heavy-duty vehicles;
- annual testing for high mileage vehicles (>100,000 miles);
- replace or upgrade emissions control systems at 100,000 mile intervals;
- on-board emission diagnostics with remote notification;
- low-cost test equipment for monitoring and identifying high emitters;
- test cycle development for different class vehicles (e.g. four wheel drive SUVs);
- electrical auxiliary power unit replacements; and
- development, deployment and demonstration of smart vehicle telematic systems

The second phase of the project is to validate the technology or strategy on a larger demonstration project over a longer period of time.

Potential Air Quality Benefits:

Many of the technologies identified can be applied to light-duty and heavy-duty vehicles to identify and subsequently remedy high-emitting vehicles in the current fleet inventory. Estimates suggest that 5 percent of existing fleets account for up to 80 percent of the emissions. Identification of higher emitting vehicles would assist with demand-side strategies, where higher emitting vehicles have correspondingly higher registration charges.

Health Impacts Studies

Proposed Project: Evaluate Ultrafine Particle Health Effects

Expected SCAQMD Cost: \$250,000

Expected Total Cost: \$3,000,000

Description of Technology and Application:

Reducing diesel exhaust from vehicles has become a high priority in the South Coast Air Basin since CARB identified the particulate phase of diesel exhaust as a surrogate for all of the toxic air contaminant emitted from diesel exhaust. Additionally, recent health studies indicate that the ultrafine portion of particulate matter may be more toxic on a per-mass basis than other fractions. Several technologies have been introduced and others are under development to reduce diesel emissions. These include among others low-sulfur diesel fuel, particulate matter traps and heavy-duty engines operating on alternative fuel such as CNG and LNG. Recent studies have shown that control technologies applied to mobile sources have been effective in reducing the mass of particulates emitted. However, there is also evidence that the number of ultrafine particles on and near roadways has increased, even while the mass of particulates has decreased. To have a better understanding of changes in ultrafine particulate emissions from the application of the new technologies and the health effects of these emissions, an evaluation and comparison of ultrafine particulate matter and the potential impacts on community exposures are necessary.

In this program, measurements and chemical composition of ultrafine particulates will be done, as well as studies conducted to characterize their toxicity. The composition of the particulates can further be used to determine the contribution from specific combustion sources. Additionally, engine or chassis dynamometer testing may be conducted on heavy-duty vehicles to measure, evaluate and compare ultrafine particulate matter, PAH and other relevant toxic emissions from different types of fuels such as CNG, low-sulfur diesel, etc. These tests may also include comparisons with the application of particulate matter retrofit traps. This program needs to be closely coordinated with the development of technologies for alternative fuels, aftertreatment and new engines in order to determine the health benefits of such technologies.

Potential Air Quality Benefits:

The AQMP for the South Coast Basin relies on significant penetration of low emission vehicles to attain federal clean air standards. Reduction of particulate emissions from the combustion of diesel and other fuels is a major priority in achieving these standards. This project would help to better understand the nature and amount of ultrafine particulates generated by different types of fuels and advanced control technologies as well as provide information on potential health effects of ultrafine particles. Such an understanding is important to assess the emission reduction potentials and health benefits of these technologies. In turn, this will have a direct effect on the policy and regulatory actions for commercial implementation of alternative fuel vehicles in the Basin.

Proposed Project: Conduct Monitoring to Assess Environmental Impacts

Expected SCAQMD Cost: \$250,000

Expected Total Cost: \$1,000,000

Description of Technology and Application:

Facilities, buildings, structures, or highways which attract mobile sources of pollution are considered “indirect” sources. Ambient and saturation air monitoring near sources such as ports, airports, rail yards, distribution centers and freeways is important to identify the emissions exposure to the surrounding communities and provide the data to then conduct the health impacts due to these sources. This project category would identify areas of interest and conduct ambient air monitoring, conduct emissions monitoring, analyze the data and assess the health impacts from mobile sources. The projects would need to be at least one year in duration in order to properly assess the air quality impacts in the area.

Potential Air Quality Benefits:

The proposed project will assist in the evaluation of adverse public health impacts associated with mobile sources. The information will be useful in (a) determining whether indirect sources have a relatively higher impact on residents living in close proximity; and (b) providing guidance to develop some area-specific control strategies in the future should it be necessary.

Proposed Project: Assess Sources and Health Impacts of Particulate Matter**Expected SCAQMD Cost:** \$250,000**Expected Total Cost:** \$300,000**Description of Technology and Application:**

Previous studies of ambient levels of toxic air contaminants, such as the MATES series of studies, have found that diesel exhaust is the major contributor to health risk from air toxics. Analyses of diesel particulate matter in ambient samples have been based on measurements of elemental carbon. While the bulk of particulate elemental carbon in the South Coast Air Basin is thought to be from combustion of diesel fuels, it is not a unique tracer for diesel exhaust.

The MATES III study collected particulate samples at ten locations in the South Coast Air Basin. Analysis of particulate bound organic compounds was utilized as tracers to estimate levels of ambient diesel particulate matter as well as estimate levels of particulate matter from other major sources. Other major sources that were taken into consideration include automobile exhaust, meat charbroiling, road dust, wood smoke and fuel oil combustion. Analyzing for organic compounds and metals in conjunction with elemental carbon upon collected particulate samples was used to determine contributing sources.

The measurement of organic compounds as tracers from specific sources is a technique that has been used in numerous source apportionment studies and published within the scientific literature. The resulting data on levels of tracers can be evaluated using Chemical Mass Balance Models and other source apportionment techniques, such as Positive Matrix Factorization, to estimate source contributions to particulate matter. The resulting estimates of ambient diesel particulate matter can then be used to assess potential health risks.

In mid-2012 the SCAQMD initiated MATES IV which includes an air monitoring program, an updated emissions inventory of toxic air contaminants and a regional modeling effort to characterize risk across the Basin. This follow-on study, for which results should be available mid-2014, continues to focus on the carcinogenic risk from exposure to air toxics, but will not estimate mortality or other health effects from particulate exposures, as in previous studies. Instead, MATES IV will measure ultrafine particle concentrations and assess human exposure to ultrafines and black carbon near sources such as airports, freeways, rail yards, busy intersections and warehouse operations. This project category would include other related studies, such as toxicity assessment based on age, source (heavy-duty, light-duty engines) and composition (semi-volatile or non-volatile fractions) to better understand the health effects and potential community exposures.

Potential Air Quality Benefits:

Results of this work will provide a more robust, scientifically sound estimate of ambient levels of diesel particulate matter as well as levels of particulate matter from other significant combustion sources. This will allow a better estimation of potential exposures to and health effects from toxic air contaminants from diesel exhaust in the South Coast Air Basin. This information in turn can be used to determine the health benefits of promoting clean fuel technologies.

Stationary Clean Fuel Technologies

Proposed Project: Develop and Demonstrate Reliable, Low Emission Monitoring Systems and Test Methods

Expected SCAQMD Cost: \$250,000

Expected Total Cost: \$500,000

Description of Technology and Application:

Currently, the inability of air/fuel ratio control (AFRC) systems to keep rich-burn engines in compliance contributes significantly to air pollution in the basin. Reliable, low-cost emission monitoring systems are needed for small-to-intermediate size combustion devices, including stationary engines, boilers, heaters, furnaces and ovens that are not large enough to justify a continuous emission monitoring system (CEMS). This class of combustion device is often permitted on the basis of a single demonstration or periodic demonstrations of NO_x and CO emissions meeting SCAQMD rule requirements or a RECLAIM concentration limit. However, SCAQMD-unannounced tests on engines and boilers have found that in many cases NO_x and/or CO levels have increased significantly above levels that have been initially or periodically demonstrated due to equipment malfunction and/or inadequate operator attention. It is suspected that the same may be true of heaters, furnaces and ovens.

Demonstrations of newer technologies in recent years could result in a commercially viable alternative to CEMs that is both reliable and feasible in terms of lower costs. For example, manufacturers of flue gas analyzers have, in recent years, developed low-cost multi-gas analyzers suitable for portable or stack-mounted use. Some preliminary testing of a new type of AFRC, which uses a different type of O₂ sensor known as a wide-band O₂ sensor, is another alternative that can be analyzed. Another technical approach might be to deploy technology utilizing the O₂ signature of a post-catalyst O₂ sensor and additional control concepts being developed by manufacturers. Since an underlying problem has been that engine, catalyst and AFRC manufacturers have developed systems independently, a system being co-developed to perform continuous diagnostics to assist operators in keeping rich-burn engines in compliance is possibly another alternative for demonstration.

Potential Air Quality Benefits:

Stationary engines, boilers, heaters, furnaces and ovens account for approximately 11 percent of total NO_x emissions and about 6 percent of total CO emissions. There has been a long-standing compliance problem with rich-burn IC engines in the basin and evidence indicates that many of these devices are operating with NO_x and/or CO emissions above levels required in their permits. Projects could potentially reduce a significant class of NO_x and CO emissions that are in excess of the assumptions in the AQMP and further enhance SCAQMD's ability to enforce full-time compliance.

Proposed Project: Develop and Demonstrate Clean Stationary Technologies**Expected SCAQMD Cost:** \$250,000**Expected Total Cost:** \$750,000**Description of Technology and Application:**

Stationary sources, including VOC sources such as large printing facilities and furniture manufacturers, have become cleaner and cleaner due to the regulatory requirements for low emissions and the advancements in technology to meet those requirements. Best Available Control Technology (BACT) regulations, however, are only required for new, modified, or relocated sources. This project category is to develop and demonstrate new technologies that can provide emissions reductions in new installations or as retrofit modifications. Possible technology examples include:

- low NO_x technologies (burners and ICEs);
- low-Btu gas technologies (e.g., digester, landfill, or dairy gases);
- alternative fuels and hydrogen blends;
- alternative diesel fuels (emulsified, gas-to-liquids, biodiesel with aftertreatment);
- low emission refinery flares;
- catalytic combustion;
- cost-effective fuel cell and fuel cell hybrid distributed generation;
- fumes-to-fuel technology to replace thermal oxidizers and capture VOC emissions for electricity generation while ensuring no emission of air toxics; and
- boiler optimization design and strategies to improve efficiencies.

Depending on the technology, a proof-of-concept project, demonstration, or pre-commercial deployment would be considered to garner further information on the technology. Issues to investigate include viability (reliability, maintainability and durability) of the technology, cost-effectiveness and operator ease-of-use in order to assess commercialization.

Potential Air Quality Benefits:

The SCAQMD has a substantial number of older, small, stationary source technologies within its jurisdiction. Since these devices are not subject to continuous emissions monitoring system requirements, evidence suggests that these devices may not be operating at their permitted NO_x, CO, hydrocarbon and PM emissions levels. Replacing these devices with cleaner and more reliable technologies or technology/fuel combinations can have dramatic reductions in all of these criteria pollutants. VOC emission reductions may also be achieved at larger stationary VOC sources to achieve the new federal ozone and PM_{2.5} standards.

Proposed Project: Develop and Demonstrate Renewables-Based Energy Generation Alternatives

Expected SCAQMD Cost: \$200,000

Expected Total Cost: \$1,000,000

Description of Technology and Application:

The objective of this proposed program is to support the development and demonstration of clean energy, renewable alternatives in stationary and mobile applications. The technologies to be considered include thermal, photovoltaic and other solar energy technologies; wind energy systems; energy storage and conservation; biomass conversion; and other renewable energy and recycling technologies. Innovative solar technologies, such as solar thermal air conditioning and photovoltaic-integrated roof shingles, are of particular interest. Also, in the agricultural sections of the Basin, wind technologies could potentially be applied to drive large electric motor-driven pumps to replace highly polluting diesel-fired pumps. Besides renewable technologies, electrolyzer technology could be used to generate hydrogen, a clean fuel. Hydrogen, when used in regular engines, can substantially reduce tail-pipe emissions, while in fuel cells the emissions are reduced to zero.

The project is expected to result in pilot-scale production demonstrations, scale-up process design and cost analysis, overall environmental impact analysis and projections for ultimate clean fuel costs and availability. This program is expected to result in several projects addressing technological advancements in these technologies that may improve performance and efficiency, potentially reduce capital and operating costs, enhance the quality of natural gas generated from renewable sources for injection into natural gas pipelines, improve reliability and user friendliness and identify markets that could expedite the implementation of successful technologies.

Potential Air Quality Benefits:

The 2012 AQMP identifies the development and ultimately the implementation of non-polluting power generation. To gain the maximum air quality benefit, polluting fossil fuel-fired electric power generation needs to be replaced with clean renewable energy resources or other advanced zero emission technologies, such as hydrogen fuel cells, particularly in a distributed generation context.

The proposed program is expected to accelerate the implementation of advanced zero emission energy sources. Expected benefits include directly reducing the emissions by the displacement of fossil generation; proof-of-concept and potential viability for such zero emission power generation systems; increased exposure and user acceptance of the new technology; reduced fossil fuel usage; and the potential for increased use, once successfully demonstrated, with resulting emission benefits, through expedited implementation. These technologies would also have a substantial influence in reducing global warming emissions.

Outreach and Technology Transfer

Proposed Project: Assessment and Technical Support of Advanced Technologies and Information Dissemination

Expected SCAQMD Cost: \$500,000

Expected Total Cost: \$800,000

Description of Project:

This program supports the assessment of clean fuels and advanced technologies, their progress towards commercialization and the dissemination of information on demonstrated technologies. The objective of this program is to expedite the transfer of technology developed as a result of Technology Advancement Office projects to the public domain, industry, regulatory agencies and the scientific community. This program is a fundamental element in the SCAQMD's outreach efforts to expedite the implementation of low emission and clean fuels technologies and to coordinate these activities with other organizations.

This program may include the following:

- technical review and assessment of technologies, projects and proposals;
- support for alternative fuel refueling and infrastructure;
- advanced technology curriculum development, mentoring and outreach to local schools;
- emissions studies and assessments of zero emission alternatives;
- advanced technology vehicle demonstrations;
- preparation of reports, presentations at conferences, improved public relations and public communications of successful demonstrations of clean technologies;
- participation in and coordination of workshops and various meetings;
- support for training programs related to fleet operation, maintenance and refueling of alternative fuel vehicles;
- publication of technical papers, reports and bulletins; and
- production and dissemination of information, including web sites.

These objectives will be achieved by consulting with industry, scientific, health, medical and regulatory experts and co-sponsoring related conferences and organizations, resulting in multiple contracts. In addition, an ongoing outreach campaign will be conducted to encourage decision-makers to voluntarily switch to alternatively fueled vehicles and train operators to purchase, operate and maintain these vehicles and associated infrastructure.

Potential Air Quality Benefits:

SCAQMD adopted fleet regulations requiring public and private fleets within the Basin to acquire alternatively fueled vehicles when making new purchases. Expected benefits of highlighting success stories in the use of advanced alternatively fueled vehicles could potentially expedite the acceptance and commercialization of advanced technologies by operators seeking to comply with the provisions of the recently adopted SCAQMD fleet rules. The resulting future emissions benefits will contribute to the goals of the AQMP.

Proposed Project: Support for Implementation of Various Clean Fuels Vehicle Incentive Programs

Expected SCAQMD Cost: \$400,000

Expected Total Cost: \$400,000

Description of Project:

This program supports the implementation of zero emission vehicle incentive programs, the Carl Moyer incentives program and the school bus incentives program. Implementation support includes application approval, grant allocation, documentation to the CARB, verification of vehicle registration and other support as needed. Information dissemination is critical to successful implementation of a coordinated and comprehensive package of incentives. Outreach will be directed to vehicle dealers, individuals and fleets.

Potential Air Quality Benefits:

As described earlier, the SCAQMD will provide matching funds to implement several key incentives programs to reduce diesel emissions in the Basin. Furthermore, the SCAQMD recently adopted fleet regulations requiring public and private fleets within the Basin to acquire alternatively fueled vehicles when making new purchases. Expected benefits of highlighting zero emission vehicle incentives could potentially expedite the acceptance and commercialization of advanced technologies by operators seeking to comply with the provisions of the recently adopted SCAQMD fleet rules. The resulting future emissions benefits will contribute to the goals of the AQMP. The school bus program and the Carl Moyer incentives program will also reduce large amounts of NO_x and PM emissions in the basin in addition to reducing toxic air contaminants.

Appendix A
SCAQMD Advisory Groups

Technology Advancement Advisory Group

| | |
|---------------------------------|--|
| *Dr. Matt Miyasato, Chair | SCAQMD |
| *Patricia Ochoa | Coalition for Clean Air |
| *Alberto Ayala..... | California Air Resources Board |
| Patrick Davis..... | U.S. Department of Energy |
| Dr. John Froines..... | Professor Emeritus University of California, Los Angeles |
| Gretchen Hardison | Los Angeles Department of Water and Power; Chair of Technical Advisory Committee of the Mobile Source Air Pollution Reduction Review Committee |
| *Ed Kjaer | Southern California Edison |
| Philip J. Hodgetts | Clean Air Now |
| Randall Lewis | Lewis Group of Companies |
| Tim Olson | California Energy Commission |
| *Pending | Western States Petroleum Association |
| Cherif Youssef | Southern California Gas Company |

*Newly appointed members

SB 98 Clean Fuels Advisory Group

- *Dr. Matt Miyasato, Chair SCAQMD
- Robert Bienenfeld American Honda Motor Company Inc
- Dr. Blair Folsom Independent Consultant in Combustion Technology
- Dr. Mridul Gautam..... West Virginia University, Adjunct Professor, &
University of Nevada-Reno
- Dr. Fritz Kalhammer Independent Consultant in Energy and Process
Technology
- Dr. Melanie Marty California Environmental Protection Agency,
Office of Environmental Health Hazard Assessment
- Dr. Wayne Miller University of California, Riverside,
College of Engineering, Center for Environmental
Research and Technology
- Dr. Vernon Roan..... University of Florida, Professor Emeritus
- Dr. Scott Samuelson..... University of California, Irvine,
Combustion Laboratory/National Fuel Cell
Research Center
- Dr. Robert Sawyer Sawyer Associates
- *Kevin Walkowicz..... National Renewable Energy Laboratory
- Dr. Nicholas Vanderborgh Independent Consultant in Fuel Cell Technologies
- Michael Walsh Independent Consultant in Motor Vehicle Pollution
Control

*Newly appointed members

Appendix B

Open Clean Fuels Contracts as of January 1, 2014

| Contract | Contractor | Project Title | Start Term | End Term | SCAQMD \$ | Project Total \$ |
|--------------------------------------|---|---|------------|----------|-----------|------------------|
| Infrastructure and Deployment | | | | | | |
| 05250 | Downs Commercial Fueling, Inc. | Purchase & Install New L/CNG Fueling System at Commercial Fueling Station in Temecula | 11/04/05 | 04/30/14 | \$203,137 | \$833,333 |
| 06028 | Consolidated Disposal Service, LLC | Purchase & Install CNG Fueling System at Long Beach Waste Transfer Station | 11/23/05 | 07/31/14 | 222,038 | 740,127 |
| 06042 | University of California Los Angeles | Upgrade Existing CNG Public Access Station with Dispenser & Card Reader | 09/05/06 | 12/31/16 | 15,921 | 31,842 |
| 06084 | Clean Energy | Upgrade Existing LNG Facility to L/CNG at Riverside County Waste Management Dept's Aqua Mansa Facility in Riverside | 04/13/06 | 02/28/16 | 120,000 | 400,000 |
| 06091 | City of Whittier | Purchase & Install New Public Access CNG Fueling Station at City Yard | 03/18/06 | 12/31/16 | 150,000 | 450,000 |
| 07051 | City of Pasadena | Purchase & Install New Public Access CNG Fueling Station | 12/28/06 | 09/01/14 | 165,000 | 550,000 |
| 07153 | Foothill Transit | Purchase & Install New Public Access CNG Refueling Station in Irwindale | 11/02/09 | 06/30/16 | 250,000 | 3,350,000 |
| 07243 | City of Commerce | Purchase & Install New Public Access L/CNG Station | 05/16/07 | 12/31/15 | 250,000 | 1,300,000 |
| 07244 | SunLine Transit Agency | Upgrade Existing Public Access CNG Stations in Thousand Palms & Indio | 04/04/07 | 04/30/14 | 90,000 | 180,000 |
| 07245 | USA Waste of California, Inc., dba L.A. Metro | Purchase & Install New LNG Production Facility using Landfill Gas from Altamont Landfill in Livermore | 07/11/08 | 12/31/14 | 300,000 | 13,000,000 |
| 07246 | USA Waste of California, Inc., dba L.A. Metro | Purchase & Install New LNG Storage Tank at Long Beach LNG Refueling Station | 12/24/08 | 06/30/17 | 200,000 | 440,000 |
| 07320 | Orange County Transportation Authority | Install New CNG Station in the City of Santa Ana | 12/21/07 | 03/31/16 | 350,000 | 5,841,729 |
| 08043 | University of California Los Angeles | Public Access CNG Refueling Station Upgrade for UCLA Transportation | 05/02/08 | 12/31/16 | 140,000 | 350,000 |
| 08044 | Beaumont Unified School District | Install Limited Access CNG Refueling Station | 03/05/09 | 12/31/16 | 288,000 | 615,994 |
| 08098 | Redlands Unified School District | Purchase & Install New CNG Refueling Station | 01/25/08 | 04/30/17 | 525,000 | 700,000 |
| 08101 | Pupil Transportation Cooperative | Upgrade Existing Public Access CNG Station | 01/04/08 | 06/30/14 | 187,154 | 300,000 |
| 09165 | California Cartage Company | Deployment of 2010 Emissions Standards Compliant LNG Trucks | 10/31/08 | 07/31/16 | 358,000 | 11,880,000 |
| 09218 | Rim of the World Unified School District | Install Mountain Safety Equipment on Five New CNG School Buses | 01/05/10 | 12/31/16 | 65,850 | 65,850 |
| 09364 | Rim of the World Unified School District | Construct & Install a CNG Fueling Station | 12/30/10 | 12/31/14 | 257,000 | 425,000 |
| 10034 | California Cartage Company | Install LNG Fueling Station at the Ports | 01/26/10 | 11/01/14 | 532,500 | 1,065,000 |
| 10054 | Applied LNG Technologies Inc. | Upgrade & Perform Emergency Repairs of L/CNG Refueling Facility | 10/30/09 | 12/31/14 | 113,359 | 226,719 |

| Contract | Contractor | Project Title | Start Term | End Term | SCAQMD \$ | Project Total \$ |
|----------|------------|---------------|------------|----------|-----------|------------------|
|----------|------------|---------------|------------|----------|-----------|------------------|

Infrastructure and Deployment (cont'd)

| | | | | | | |
|-------|---|---|----------|----------|---------|-----------|
| 10055 | Waste Management Collection & Recycling | New Public Access CNG Refueling Station in Santa Ana | 12/11/09 | 12/31/14 | 250,000 | 1,622,558 |
| 10067 | Rim of the World Unified School District | Install Mountain Safety Equipment on Seven New CNG School Buses | 12/21/09 | 12/31/16 | 92,190 | 92,190 |
| 11548 | Mansfield Gas Equipment Systems, Inc. | Buydown Incentive Program for CNG Home Refueling Appliance "Phil" | 09/07/12 | 06/30/14 | 60,000 | 356,000 |
| 11561 | Supershuttle International | Purchase and Convert 20 Gasoline-Powered Passenger Vans to CNG-Powered Passenger Shuttle Vans | 06/01/11 | 10/31/14 | 464,900 | 954,600 |
| 12135 | Placentia-Yorba Linda Unified School District | Upgrade CNG Fueling Station | 11/18/11 | 11/30/17 | 60,000 | 60,000 |
| 12259 | A-1 Alternative Fuel Systems | Demonstrate Natural Gas-Powered Police Vehicle | 04/20/12 | 10/19/14 | 65,000 | 65,000 |
| 12267 | West Covina Unified School District | Upgrade CNG Fueling Facility | 10/12/12 | 12/31/17 | 60,000 | 60,000 |
| 12851 | Clean Energy | Construct Two LNG Fueling Stations | 10/05/12 | 12/31/18 | 400,000 | 3,018,118 |
| 12852 | City of Corona | Construct Public Access CNG Fueling Stations | 10/12/12 | 12/31/18 | 200,000 | 618,429 |
| 12853 | Rainbow Disposal Company, Inc. | Upgrade CNG Fueling Station | 03/08/13 | 12/31/18 | 200,000 | 400,000 |
| 12854 | Waste Management, Inc. | Upgrade LNG Fueling Station at Baldwin Park Facility | 08/17/12 | 12/31/18 | 300,000 | 1,588,100 |
| 13401 | Nite-Hawk Sweepers LLC | Demonstrate Natural Gas-Powered Parking Lot Sweepers | 08/28/13 | 12/31/15 | 90,000 | 200,000 |

Fuels/Emission Studies

| | | | | | | |
|-------|--|--|----------|----------|---------|---------|
| 07236 | National Renewable Energy Laboratory | Investigate the Role of Lubricating Oil on PM Emissions from Vehicles | 03/23/07 | 12/30/15 | 200,000 | 446,887 |
| 10066 | National Renewable Energy Laboratory | CRADA – Loan of 70 MPa Hydrogen Quality Sampling Apparatus to SCAQMD | 11/02/09 | 12/30/15 | 0 | 0 |
| 10722 | University of California Riverside/CE-CERT | Re-Establish Testing Facility & Quantify PM Emission Reductions from Charbroiling Operations | 08/06/10 | 04/30/14 | 60,000 | 276,000 |

Emission Control Technologies

| | | | | | | |
|-------|--|---|----------|----------|---------|-----------|
| 10696 | Johnson Matthey, Inc. | Optimize & Demonstrate SCRT for NO _x and PM Emissions Control | 07/09/10 | 12/31/14 | 300,000 | 2,818,449 |
| 10697 | Johnson Matthey, Inc. | Optimize & Demonstrate SCCRT for NO _x and PM Emissions Control | 07/09/10 | 12/31/14 | 300,000 | 2,818,449 |
| 12113 | Southern Counties Terminals dba Griley Air Freight | Retrofit Three Heavy-Duty Diesel Trucks with Diesel Particulate Filters | 10/13/11 | 03/31/14 | 15,000 | 45,000 |
| 12114 | South Bound Express, Inc. | Retrofit Three Heavy-Duty Diesel Trucks with Diesel Particulate Filters | 10/13/11 | 03/31/14 | 15,000 | 54,623 |
| 12118 | National Ready Mixed Concrete | Retrofit 13 Heavy-Duty Diesel Trucks with Diesel Particulate Filters | 10/13/11 | 03/31/14 | 65,000 | 239,806 |
| 12120 | Standard Concrete Products | Retrofit 40 Heavy-Duty Diesel Trucks with Diesel Particulate Filters | 10/13/11 | 03/31/14 | 200,000 | 596,665 |
| 12121 | Challenge Dairy Products, Inc. | Retrofit Three Heavy-Duty Diesel Trucks with Diesel Particulate Filters | 11/18/11 | 03/31/14 | 15,000 | 46,845 |

| Contract | Contractor | Project Title | Start Term | End Term | SCAQMD \$ | Project Total \$ |
|---|--|---|------------|----------|-----------|------------------|
| Emission Control Technologies (cont'd) | | | | | | |
| 12122 | Bear Trucking, Inc. | Retrofit One Heavy-Duty Diesel Truck with Diesel Particulate Filter | 10/14/11 | 03/31/14 | 5,000 | 13,555 |
| 12123 | RRM Properties | Retrofit 107 Heavy-Duty Diesel Trucks with Diesel Particulate Filters | 10/06/11 | 03/31/14 | 535,000 | 1,481,067 |
| 12124 | Gaio Trucking, Inc. | Retrofit Nine Heavy-Duty Diesel Trucks with Diesel Particulate Filters | 09/28/11 | 03/31/14 | 40,000 | 147,261 |
| 12125 | Spragues Ready Mix | Retrofit Four Heavy-Duty Diesel Trucks with Diesel Particulate Filters | 10/14/11 | 03/31/14 | 20,000 | 62,953 |
| 12150 | Puritech US, LLC | Retrofit Four Heavy-Duty Diesel Trucks with Diesel Particulate Filters | 02/14/12 | 06/30/14 | 72,000 | 172,000 |
| 12175 | RRM Properties | Retrofit Seven Heavy-Duty Diesel Trucks with Diesel Particulate Filters | 12/08/11 | 03/31/14 | 35,000 | 84,812 |
| 12186 | Pipeline Carriers Inc. | Retrofit 25 Heavy-Duty Diesel Trucks with Diesel Particulate Filters | 12/16/11 | 03/31/14 | 50,000 | 182,300 |
| 13407 | Chaffey Joint Union High School District | Demonstrate Diesel Particulate Filter Technology on Two Diesel School Buses | 05/18/13 | 03/31/14 | 30,000 | 45,000 |

Electric/Hybrid Technologies & Infrastructure

| | | | | | | |
|-------|---|--|----------|----------|-----------|-----------|
| 08063 | Quantum Fuel Systems Technologies Worldwide, Inc. | Develop & Demonstrate 20 Plug-In Hybrid Electric Vehicles | 01/22/08 | 12/15/14 | 2,165,613 | 2,885,266 |
| 08219 | A123Systems Inc. | Develop & Demonstrate Ten Plug-In Hybrid Electric Vehicles | 06/05/09 | 06/04/15 | 622,667 | 962,667 |
| 11204 | AC Propulsion | Develop & Demonstrate Electric Drive Conversion for Fleet Vehicles | 12/24/10 | 11/30/14 | 300,000 | 755,767 |
| 11606 | Odyne Systems, LLC | Develop and Demonstrate Plug-In Hybrid Electric Drive System for Medium- and Heavy-Duty Vehicles | 07/08/11 | 09/30/15 | 494,000 | 2,599,000 |
| 11614 | Transportation Power, Inc. | Demonstrate Battery Electric Heavy-Duty Trucks | 07/08/11 | 09/30/14 | 196,505 | 2,616,275 |
| 11615 | Parker Hannifin Corporation | Develop & Demonstrate Up to Four Heavy-Duty Hydraulic Hybrid Vehicles | 01/18/13 | 12/13/14 | 250,000 | 2,000,000 |
| 11725 | Puente Hills Nissan | Lease of Three Nissan Leaf Vehicles for 39 Months | 05/27/11 | 08/26/14 | 60,222 | 82,722 |
| 12020 | Coulomb Technologies | Install Electric Charging Infrastructure | 10/05/12 | 04/04/14 | 70,000 | 70,000 |
| 12028 | Electric Vehicle International, Inc. | Demonstrate and Replace UPS Diesel Delivery Trucks with Zero-Emission Medium-Duty Trucks | 09/09/11 | 09/08/17 | 1,400,000 | 4,872,000 |
| 12825 | BMW of Monrovia | Lease Two BMW ActiveE Electric Vehicles for Two Years | 03/23/12 | 03/22/14 | 31,065 | 31,065 |
| 12862 | Volvo Technology of America, Inc. | Develop Class 8 Plug-In Hybrid Heavy-Duty Vehicle | 12/07/12 | 12/31/14 | 1,200,000 | 2,400,000 |
| 12889 | BMW of Monrovia | Lease Two BMW ActiveE Electric Vehicles for Two Years | 03/23/12 | 03/22/14 | 31,065 | 31,065 |
| 13042 | South Bay City Council of Governments | Demonstrate Medium-Speed Electric Vehicles | 11/02/12 | 05/01/15 | 320,000 | 528,078 |
| 13058 | Capstone Turbine Corporation | Develop Microturbine Series Hybrid System for Class 7 Heavy-Duty Vehicle Applications | 08/12/13 | 11/30/14 | 360,000 | 1,210,000 |

| Contract | Contractor | Project Title | Start Term | End Term | SCAQMD \$ | Project Total \$ |
|---|--|---|------------|----------|-----------|------------------|
| Electric/Hybrid Technologies & Infrastructure (cont'd) | | | | | | |
| 13149 | University of California, Los Angeles | Develop South Coast PEV Readiness Plan | 01/18/13 | 06/30/14 | 32,000 | 63,500 |
| 13251 | Selman Chevrolet Company | Lease Two 2012 or Newer Chevrolet Volt Extended-Range Electric Vehicles for Three Years | 11/28/12 | 05/01/15 | 31,375 | 31,375 |
| 13404 | Penske Honda of Ontario | Lease Two Honda Fit Electric Vehicles for Three Years | 05/02/13 | 05/01/16 | 31,307 | 31,207 |
| 13410 | Selman Chevrolet Company | Lease Three 2013 Chevrolet Volt Extended-Range Electric Vehicles for Three Years | 04/03/13 | 04/02/16 | 41,084 | 41,084 |
| 13418 | City of Claremont | SoCalEV Infrastructure MOA to Install & Upgrade EV Charging Infrastructure | 08/29/13 | 12/15/14 | 0 | 0 |
| 13419 | California State University, Los Angeles | SoCalEV Infrastructure MOA to Install & Upgrade EV Charging Infrastructure | 08/05/13 | 12/15/14 | 0 | 0 |
| 13420 | University of California, Irvine | SoCalEV Infrastructure MOA to Install & Upgrade EV Charging Infrastructure | 08/28/13 | 12/15/14 | 0 | 0 |
| 13421 | County of Los Angeles | SoCalEV Infrastructure MOA to Install & Upgrade EV Charging Infrastructure | 09/06/13 | 12/15/14 | 0 | 0 |
| 13426 | Transportation Power, Inc. | Develop & Demonstrate Catenary Class 8 Trucks (1 Electric & 1 CNG Platform) | 06/07/13 | 06/06/16 | 2,617,887 | 3,182,795 |
| 13429 | Longo Toyota | Lease One Toyota RAV4 Electric Vehicle for Three Years | 04/19/13 | 04/18/16 | 19,618 | 19,618 |
| 13439 | City of Carson | MOU for Catenary Zero Emission Goods Movement Project | 10/01/13 | 09/30/16 | 0 | 0 |

Engine Systems

| | | | | | | |
|-------|--------------------------------------|--|----------|----------|-----------|-----------|
| 13168 | National Renewable Energy Laboratory | Develop, Integrate & Demonstrate Heavy-Duty Natural Gas Engines and Vehicles | 05/22/13 | 12/31/15 | 1,300,000 | 1,300,000 |
|-------|--------------------------------------|--|----------|----------|-----------|-----------|

Mobile Fuel Cell Technologies

| | | | | | | |
|-------|--|---|----------|----------|--------|--------|
| 13155 | Fletcher Jones Motor Cars Inc. (Mercedes-Benz) | Lease Two F-Cell Fuel Cell Vehicles for Two Years | 02/08/13 | 02/08/15 | 30,397 | 30,397 |
| 14139 | Hyundai America Technical Center Inc. | No-Cost Lease of Fuel Cell Vehicle for Two Years | 12/13/13 | 12/12/15 | 0 | 0 |

Hydrogen Technologies and Infrastructure

| | | | | | | |
|-------|---|---|----------|----------|-----------|-----------|
| 04185 | Quantum Fuel Systems Technologies Worldwide | Develop & Demonstrate Hydrogen Internal Combustion Engine Vehicles | 10/18/04 | 04/30/14 | 2,353,000 | 3,328,631 |
| 10046 | Air Products and Chemicals Inc. | Develop & Demonstrate Renewable Hydrogen Energy and Refueling Station | 12/21/09 | 11/21/14 | 750,000 | 8,436,735 |
| 10061 | Hydrogenics Corporation | Maintenance & Data Management for the AQMD Hydrogen Refueling Station | 10/30/09 | 1/31/15 | 468,000 | 468,000 |

| Contract | Contractor | Project Title | Start Term | End Term | SCAQMD \$ | Project Total \$ |
|----------|------------|---------------|------------|----------|-----------|------------------|
|----------|------------|---------------|------------|----------|-----------|------------------|

Hydrogen Technologies and Infrastructure (cont'd)

| | | | | | | |
|-------|---|---|----------|----------|---------|-----------|
| 11150 | Hydrogen Frontier, Inc. | Maintain & Operate City of Burbank Hydrogen Fueling Station | 11/24/10 | 01/23/16 | 475,000 | 1,635,000 |
| 10482 | California State University Los Angeles | Install and Demonstrate PEM Electrolyzer, Providing Hydrogen Fueling for Vehicles and Utilizing the Technology in the Engineering Technology Curriculum at the University | 03/04/11 | 10/03/17 | 250,000 | 1,662,000 |
| 11555 | University of California Los Angeles | Construct Hydrogen Fueling Infrastructure | 12/07/12 | 12/31/19 | 400,000 | 2,589,990 |
| 12075 | Linde, LLC | Expand Hydrogen Fueling Infrastructure | 11/02/12 | 11/02/18 | 250,000 | 2,732,177 |
| 13146 | California State University Los Angeles | Lease of One Toyota Prius Hydrogen-Fueled Vehicle | 11/08/12 | 03/31/14 | 0 | 0 |
| 13259 | Air Products and Chemicals, Inc. | Hydrogen Station Operation & Maintenance for Five Cities Hydrogen Program | 03/26/13 | 09/25/14 | 300,000 | 300,000 |
| 13400 | Energy Independence Now | Develop Hydrogen Station Investment Plan | 04/05/13 | 01/04/15 | 50,000 | 130,000 |
| 14067 | University of California, Irvine | Develop Hydrogen Storage Capability for the Gas-Blending Facility | 12/31/13 | 07/16/15 | 200,000 | 688,000 |

Health Impacts Studies

| | | | | | | |
|-------|--|--|----------|----------|---------|-----------|
| 11527 | University of Southern California | Conduct Study on Sources, Composition, Variability and Toxicological Characteristics of Ultrafine Particles in Southern California | 07/24/11 | 07/24/14 | 470,969 | 470,969 |
| 12197 | University of California Riverside/CE-CERT | Health Effects of PM Particles from Heavy-Duty Biodiesel-Fueled Vehicles | 01/13/12 | 03/31/14 | 207,500 | 207,500 |
| 12208 | University of California Riverside/CE-CERT | Determine the Physical and Chemical Composition and Associated Health Effects of Tailpipe PM Emissions | 01/21/12 | 07/19/14 | 175,000 | 1,375,000 |
| 12865 | University of California Los Angeles | Develop Quantitative Cellular Assays for Use in Understanding the Chemical Basis of Air Pollutant Toxicity | 06/08/12 | 07/07/14 | 368,457 | 368,457 |

Stationary Clean Fuels Technology

| | | | | | | |
|-------|------------------------------------|---|----------|----------|---------|---------|
| 09303 | Permacy Solar | Install 40kW (AC) Crystalline Silicon System at AQMD HQs | 01/30/09 | 01/29/15 | 387,162 | 387,162 |
| 09304 | Solar Integrated Technologies Inc. | Install Turnkey Rooftop 40 kW Building Integrated Photovoltaic System | 12/20/08 | 12/19/14 | 390,695 | 390,695 |
| 10723 | Eastern Municipal Water District | Retrofit Digester Gas Engine with NO _x Tech Aftertreatment Emission Control Technology | 03/16/12 | 06/15/15 | 85,000 | 889,000 |
| 11208 | Long Beach Unified School District | Air Filtration MOA | 12/02/10 | 12/01/14 | 0 | 0 |

| Contract | Contractor | Project Title | Start Term | End Term | SCAQMD \$ | Project Total \$ |
|----------|------------|---------------|------------|----------|-----------|------------------|
|----------|------------|---------------|------------|----------|-----------|------------------|

Stationary Clean Fuels Technology (cont'd)

| | | | | | | |
|-------|-------------------------------------|--|----------|----------|---------|---------|
| 13030 | University of California Irvine | Demonstrate 300 kW Molten Fuel Cell with Exhaust-Fired Absorption Chiller | 10/12/12 | 04/11/15 | 257,500 | 257,500 |
| 13078 | University of California, Riverside | Steam Hydrogasification Reaction Demonstration to Generate Substitute Natural Gas from Biomass Waste | 03/07/13 | 06/07/14 | 72,916 | 922,130 |

Outreach and Technology Transfer

| | | | | | | |
|-------|---|--|----------|----------|---------|---------|
| 00069 | Walsh Consulting | Technical Assistance Relating to the Use of Alternative Fuels in Mobile Sources | 02/17/00 | 02/28/14 | 35,000 | 35,000 |
| 05128 | Mid-Atlantic Research Institute LLC | Development, Outreach & Commercialization of Advanced Heavy-Duty and Off-Road Technologies | 08/08/05 | 03/31/15 | 40,000 | 40,000 |
| 07060 | Don Breazeale and Associates, Inc. | Technical Assistance Related to Air Quality Impacts of Regional Goods Movement | 11/15/06 | 05/31/14 | 58,000 | 58,000 |
| 07062 | The Tioga Group, Inc. | Technical Assistance Related to Air Quality Impacts of Regional Goods | 12/19/06 | 11/30/14 | 58,000 | 58,000 |
| 07129 | Breakthrough Technologies Institute, Inc. | Technical Assistance with Fuel Cell Technology | 12/01/06 | 03/31/14 | 40,000 | 40,000 |
| 08210 | Sawyer Associates | Technical Assistance on Mobile Source Control Measures and Future Consultation on TAO Activities | 02/22/08 | 02/28/14 | 25,000 | 25,000 |
| 09252 | JWM Consulting Services | Technical Assistance with Review & Assessment of Advanced Technologies, Heavy-Duty Engines, and Conventional & Alternative Fuels | 12/20/08 | 06/30/14 | 30,000 | 30,000 |
| 09337 | Mark Weekly, CPA | Follow-Up Assessment of AQMD's Compliance with Special Revenue Funds | 03/03/09 | 01/31/15 | 35,000 | 35,000 |
| 11028 | Martin Kay | Technical Assistance on Stationary Source Control Measures & Future Consultation on TAO Activities | 08/04/10 | 12/31/15 | 40,000 | 40,000 |
| 11182 | Tech Compass | Technical Assistance with Alternative Fuels, Fuel Cells, Emissions Analysis & Aftertreatment Technologies | 11/19/10 | 12/31/14 | 75,000 | 75,000 |
| 11484 | Gladstein, Neandross & Associates, LLC | Develop and Implement Two Customer Centers to Provide Education and Outreach to Truck Owners and Operators | 01/27/11 | 01/31/15 | 150,000 | 150,000 |
| 12093 | TIAX LLC | Technical Assistance with Low- and Zero-Emission Vehicles, Fuel Cells and Fueling Infrastructure | 04/06/12 | 04/05/14 | 75,000 | 75,000 |
| 12380 | The Tioga Group | Technical Assistance Related to Emissions, Advanced Technologies and Goods Movement | 04/13/12 | 04/30/14 | 25,000 | 25,000 |
| 12381 | Integra Environmental Consulting Inc. | Technical Assistance Related to Emission Inventories, Goods Movement and Off-Road Sources | 04/06/12 | 04/30/14 | 25,000 | 25,000 |

| Contract | Contractor | Project Title | Start Term | End Term | SCAQMD \$ | Project Total \$ |
|--|--|---|------------|----------|-----------|------------------|
| Outreach and Technology Transfer (cont'd) | | | | | | |
| 12453 | Tech Compass | Technical Assistance with Alternative Fuels, Fuel Cells, Emissions Analysis and Aftertreatment Technologies | 06/21/12 | 05/30/14 | 75,000 | 75,000 |
| 12486 | ICF Resources LLC | Technical Assistance with Goods Movement and Zero Emission Transportation Technologies | 09/24/13 | 09/23/15 | 50,000 | 50,000 |
| 12604 | Joseph C. Calhoun, P.E., Inc. | Technical Assistance with Low- and Zero-Emission Vehicles, Technology and Emissions Analysis | 06/01/12 | 12/31/14 | 20,000 | 20,000 |
| 13081 | Burnett & Burnette | Technical Assistance for Advanced, Low- and Zero-Emissions Mobile and Stationary Source Technologies | 11/01/12 | 04/30/14 | 40,000 | 40,000 |
| 13194 | Clean Fuel Connection Inc. | Technical Assistance with Alternative Fuels, Renewable Energy and Electric Vehicles | 12/07/12 | 12/06/14 | 30,000 | 30,000 |
| 13198 | Gladstein, Neandross & Associates, LLC | Technical Assistance with Alternative Fuels, Emissions Analysis and On-Road Sources | 12/14/12 | 12/13/14 | 75,000 | 75,000 |
| 13256 | Three Squares Inc. | Develop, Initiate & Implement Clean Vehicle Outreach Project | 01/05/13 | 12/31/13 | 21,500 | 21,500 |
| 13408 | University of California, Irvine | Demonstrate Building Integration of Electric Vehicles, Photovoltaics and Stationary Fuel Cells | 09/30/13 | 09/29/15 | 150,000 | 270,000 |
| 13414 | Three Squares Inc. | Cosponsor 2013 The Women in Green Forum (Southern California & Wash DC) | 05/27/13 | 11/30/13 | 25,000 | 400,000 |
| 13415 | University of California Davis, Office of Research | Cosponsor the 2013 Asilomar Conference on Transportation & Energy Policy | 06/28/13 | 12/31/13 | 30,000 | 100,000 |

Appendix C

Final Reports for 2013

SCAQMD Contract #07149

December 2013

Purchase & Install New Public Access LNG-L/CNG Fueling Station at City Municipal Service Yard

Contractor

City of San Bernardino

Cosponsors

City of San Bernardino
MSRC/AB 2766 Discretionary Fund
SANBAG
SCAQMD

Project Officer

Larry Watkins

Background

The SCAQMD has adopted various rules and regulations requiring municipalities that operate fleets of medium and heavy-duty trucks to purchase less polluting vehicles that operate on alternative fuels such as CNG and LNG. Thus, the City of San Bernardino (City) began purchasing LNG and CNG vehicles when fleet expansion vehicles were needed. After an analysis of labor and fuel expended driving to offsite fueling locations, it became apparent that the City needed to build a local LNG-CNG fueling station. Consequently, the City applied for and received funding assistance from the SCAQMD to build one.

Project Objectives

The objectives of this project were to:

- Establish an initial regional fueling station capable of meeting the short-term fueling needs of LNG-CNG vehicles operating under the fleet rules within the metro San Bernardino area; and
- Develop a fueling facility to support the City's planned deployment of LNG refuse trucks.

Technology Description

The LNG-L/CNG fueling station was built based on proven technology. The project included installation of a 15,000 gallon LNG bulk storage tank, a single dispenser with a submerged multi-

function pump and CNG ground storage containers with 36,000 standard cubic feet capacity.



Figure 1: East Valley Regional Fueling Facility

Status

EFS West was awarded the contract for the construction, start-up and commissioning of the LNG-L/CNG fueling station. On October 23, 2006, EFS West ordered the major equipment considering the long lead time for the LNG tank. The contractor also provided final site and mechanical design engineering. Final plans and calculations were submitted to the City Building Department for plan check and in May 2007 the plans were approved.

On June 6, 2007, EFS West mobilized the field crew and began site clearing. The foundation were complete on June 26. On July 23 the 15,000 gallon LNG tank, the three CNG tanks and the mechanical equipment arrived and were set in place. During the next month the multifunction pump and CNG pump skids were installed, the piping was welded and other related components were installed.

Preparing for the first testing, on September 24, 2007, the LNG tank was filled with liquid nitrogen for cooling and testing purposes. The system was pressure tested and inspected by the Fire Engineering consultant. Tests continued and during the month of October the manufacturer programming and station specific mechanical

engineering was done. The first load of LNG was delivered in November and the station was able to pump LNG and produce CNG but the system was not automatic. The City’s subcontractor made adjustments and reprogrammed the controller. The system was improved and on November 30 the City and its consultant reviewed the station, approving all but a few items. The remaining items were tested in December and the station was placed into full operation.

The Notice of Completion for the City of San Bernardino East Valley Regional LNG-L/CNG Fueling Facility was filed on March 27, 2008. While the station was commissioned in March 2008, the City had to provide five years of annual reporting including throughput to the SCAQMD under this contract.

Results

The development of this LNG-L/CNG infrastructure has achieved the following:

- Reduced air pollution emissions.
- Reduced diesel consumption
- Provided a vital LNG infrastructure link along the ICTC
- Provided a City LNG fueling site to operate its heavy-duty trucks
- Allowed for the expanded market penetration of additional clean fuel, natural gas vehicles along the ICTC and
- Allowed CNG users an additional location where they can fuel their vehicles

The City’s fleet has increased to 26 LNG heavy-duty refuse trucks and 21 CNG vehicles. This displaced more than 75,000 gallons of diesel fuel in the first six months of station use.

Benefits

In one year the City of San Bernardino’s initial 20 LNG waste hauling trucks reduced an estimated 18,110 pounds of PM and NO_x emissions annually and displaced consumption of diesel by more than 130,000 gallons a year. The City plans to purchase additional natural gas vehicles through the normal replacement cycle and by 2012 the City plans to have 43 LNG trucks and 32 CNG vehicles in its fleet.

Issues

There was a prolonged problem with false alarms that stopped station operation and an ongoing

problem with the multi-function pump that disables the CNG production. The multi-function pump problem is related to fine tuning, according to EFS West; Nexgen/Chart the mechanical subcontractor is continuing to make adjustments to the station’s controller and multi-function pump. The false alarms have been addressed. The City and EFS West have decided to handle this as a warranty issue because the City has had beneficial use of the station for some time.

Project Costs

The cost of the project was \$1,919,912, more than \$550,000 over the original projected cost, due mainly to the increase in world materials costs. The City was able to secure additional CMAQ funding of \$91,186 from SANBAG and utilize some of the City’s Sewer and Refuse funds. Cost-share for this project was as follows:

| | |
|----------------------------------|--------------------|
| SANBAG CMAQ Funds | \$1,003,859 |
| City of San Bernardino | 531,192 |
| SCAQMD Contract #07149 (CF\$) | 164,861 |
| SCAQMD Contract #03100 (R1309.1) | 143,208 |
| MSRC/AB 2766 Discretionary Fund | 76,792 |
| Final Project Total | \$1,919,912 |

Commercialization and Application

The LNG-L/CNG fueling station process is an available, proven technology. There are many installations in California, and 12 stations in the Los Angeles Metropolitan Area alone. These installations are typically for specific fleet owners, some allowing public use and others remaining private. With pressure from government agencies, environmental groups and the relative cost of diesel fuel, the use of LNG fuel will likely increase dramatically in the future.

Summary and Conclusions

With the construction of the City of San Bernardino LNG-L/CNG Fueling Station, the City and the larger community will benefit greatly from the availability of alternative fuels. The San Bernardino Valley area now has a location to fuel both LNG and CNG vehicles.

Initial fuel use is estimated to be approximately 275,000 LNG gallons per year. Once the City operates a full complement of natural gas vehicles, the City’s fleet alone will require a minimum of 1.8 million LNG gallons annually.

Purchase & Install New CNG Fueling Station at Sun Valley Bus Garage

Contractor

Los Angeles Unified School District (LAUSD)

Cosponsors

LAUSD
SCAQMD

Project Officer

Larry Watkins

Background

CARB has identified diesel exhaust particulates and over 40 chemical components associated with particulates as human carcinogens and toxic air contaminants. In 1998 CARB adopted a resolution identifying replacement of all pre-1977 diesel school buses with alternative fuel buses. Additionally, the 2007 AQMP relies on the expedited implementation of advanced technologies and clean-burning fuels in Southern California to achieve air quality standards. In light of these facts, coupled with LAUSD's growing natural gas fleet, LAUSD applied for and received funding assistance from the SCAQMD to build a new time- and fast-fill CNG station.

Project Objective

LAUSD's project objective was installation of facilities for CNG fueling and maintenance and the expansion of the natural gas fueling infrastructure needed to support LAUSD'S school bus fleet fueling needs. Specifically, this contract provided funding assistance to construct and operate a new time- and fast-fill CNG station at LAUSD's Sun Valley Bus Garage, located at 11247 Sherman Way, Sun Valley, California.

The successful implementation of LAUSD's school bus replacement program will provide less polluting and safer school transportation for school children. In addition, the program maximizes potential emission benefits in high diesel and high PM10 exposure areas, thus also

enhancing the objectives of the Environmental Justice and Children's Health Initiatives adopted by the LAUSD Board. Without the use and expansion of clean fuel CNG buses by local school districts, the economic burden may severely increase the risk and exposure of children to toxic diesel particulate matter and smog-forming pollutants.

The new station will provide fuel for LAUSD's existing CNG fleet as well as the 40 CNG buses on order plus an additional 30 buses to be purchased over the next three years.

Technology Description

The new CNG fueling station included installation of a compressor skid (280 SCFM or equivalent) with 150 HP electric motor; storage vessels with 20,000 SCF at 4000 PSI capacity; 20-dual hose time-fill posts; 40 hoses and nozzles capable of fueling vehicles at 3,600 PSI; and a single Xebec gas dryer.

Status

The fueling station became operational on August 11, 2008. Throughput for the first three quarters of operation exceeded 90,000 gasoline gallon equivalents. Unanticipated issues that arose during construction included:

1. Weaver Electric refusing to agree to the Project Stabilization Agreement to employ union labor with the use of union funds; the outcome of this issue involved Weaver Electric being assessed a \$51,000 fine and having to use LAUSD employees and funds for the project.
2. Gas service that should have remained at 20-22 psi on the compressor was 33 psi; the increased gas pressure required the purchase and installation of a high volume gas regulator to reduce pressure to normal.

Once commissioned, LAUSD had to provide the SCAQMD five years of annual reporting including throughput through 2013 under this Contract.



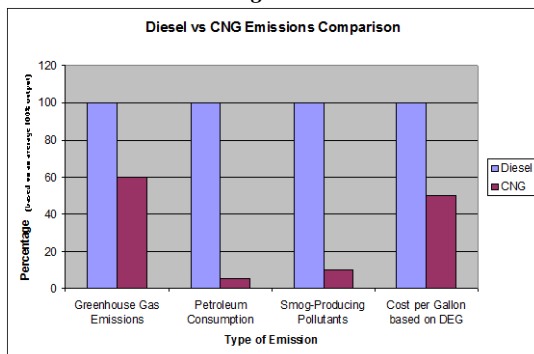
Figure 1: CNG Compressor

Results

As a result of the installation of the new CNG fueling station, several positive results occurred.

- A decrease in emissions including greenhouse gases, carbon dioxide, nitrogen oxides, particulate matter, and toxic and carcinogenic pollutants.
- Imported diesel fuel will not be consumed and an equivalent number of cleaner CNG gallons, which are locally produced, will be consumed.
- Operation and maintenance requirements of the new technology will decrease by over 50% based on fewer carbon emissions from bus fleets. CNG engines last longer, produce less carbon emissions and require less frequent maintenance.

Figure 2



Benefits

In addition to increased efficiency of fueling LAUSD's CNG fleet, project benefits include (based on research assumptions): 30-40% less greenhouse gas emissions (greenhouse gas carbon dioxide); natural gas provides a reduction in petroleum consumption by almost 100% from the level of gasoline; 60-90% less smog-producing pollutants including nitrogen oxides, particulate

matter and toxic and carcinogenic pollutants; over 85% of natural gas is domestically produce and the cost of natural gas is over 30% less than the cost of diesel fuel (per gallon, based on a diesel equivalent gallon).

Diesel fuel consumption compared to CNG consumption for the number of gallons per year shows that an average savings of 2 million gallons of imported diesel fuel is saved per year with the use of CNG, which also increases savings by an estimated \$12 million plus annually over the cost of diesel fuel.

Project Costs

The initial budget for this project was estimated at a total of \$1,747,000 but actual project costs came under budget at \$1,342,119. The final project cost-share was as follows:

| | |
|--|--------------------|
| SCAQMD Contract #08271 | \$380,203 |
| SCAQMD's Lower-Emission School Bus Replacement Program | \$536,520 |
| LAUSD | \$425,396 |
| Total Project Costs | \$1,342,119 |

Commercialization and Applications

Anticipated and potential applications of the CNG fuel station includes saving money, a decrease in the carbon footprint from the bus fleet from diesel fuel and a decrease in many other major air pollutants.

Projects to further improve the CNG fuel station are Phase II of the project which includes the purchase of a minimum of 60 CNG buses, but potentially over 100 buses total, and construction of more CNG fuel stations district-wide.

The cost of compressed natural gas should remain table due to local production.

Purchase & Deploy Six CNG Cutaway Shuttle Vans

Contractor

Ace Parking Management

Cosponsors

Ace Parking Management
SCAQMD
U.S. Dept. of Energy

Project Officer

Phil Barroca

Background

In 2009, the SCAQMD Board recognized funding from the U.S. Department of Energy Clean Cities Petroleum Reduction Technologies for the Transportation Sector, and also provided match funds of \$750,000 from the Clean Fuels Fund for alternative fuel-powered airport ground transportation projects.

Project Objective

The project objective was to increase the use of alternative-fuel and reduce petroleum dependency in the on-road transportation sector through the deployment of natural gas fueled airport ground transportation vehicles operating in the South Coast Air Basin. This project, which increased co-funding from Ace Parking Management, was to purchase and deploy (for a minimum of two years) six Ford E-450 cutaway passenger vehicles converted to operate exclusively on CNG.

Technology Description

The project involves the purchase of six new 2011 model year Ford E-450 cutaway vehicles, equipped with OEM installed gasoline-powered engines. The Ford engine has 6.8L of displacement and a V-10 cylinder configuration. The vehicle has a gross vehicle weight rating (GVWR) of 14,500-lbs. The engine is converted to dedicated CNG-power with a CARB-certified conversion system manufactured by BAF

Technologies. The vehicle is fitted with 29 gasoline gallon equivalents (GGE) of fuel capacity, comprised of two 14.5 GGE CNG tanks that are positioned in the rear of the vehicle and replacing the OEM gasoline tank.

Status

All six Ford E-450 Cutaway vehicles were purchased and converted to dedicated CNG with the CARB certified BAF conversion system. The vehicles were deployed to the Los Angeles area to provide ground transportation shuttle service between Los Angeles International Airport and remote parking structures and commenced operation in the fourth quarter of 2011. Per DOE requirements, the project required quarterly reports on both fuel usage and mileage for each vehicle. All six vehicles reported usage for four consecutive quarters (one year), and four vehicles provided usage data for a total of seven consecutive quarters. Two vehicles were removed from service in the fourth quarter of 2012, and all six vehicles were removed from operation at, or near the end of, the second quarter of 2013. The company was contacted to provide an explanation for discontinued use of the vehicles and they explained the company had to cease operating at the existing parking facility in the Los Angeles area, but is expected to resume operation in the second quarter of 2014 at a new location servicing the Los Angeles Airport.



Figure 1: Ford E-450 Cutaway with 6.8L V-10

Results

During the seven quarter period in which all or most of the vehicles were in continuous operation, the vehicles collectively amassed 511,000 miles and displaced more than 102,000 gallons of gasoline. The vehicles averaged 2,600 miles per quarter and consumed an average of 520 GGE of fuel, resulting in a fuel consumption rate of 5 miles per gallon.

The 2011 Ford E-450 cutaway is classified as a heavy-duty vehicle with a GVWR greater than 14,000-lbs. Based on CARB Executive Orders and the certified emissions for both the Ford OEM version of this vehicle and the BAF CNG version of this vehicle, the CNG-powered vehicle emits 35% less emissions in terms of hydrocarbon and NO_x emissions.

Benefits

Relative to its gasoline-powered counterpart, the CNG version of this vehicle is 35% cleaner in hydrocarbon and NO_x emissions. The vehicles are also helping to displace the use of petroleum based fuels. The full benefits of this program are yet to be determined as the project was unexpectedly halted at the end of the second quarter of 2013 but is expected to produce increased benefits over the full life of these vehicles. Based on full-life projections of 200,000 to 300,000 miles per vehicle, these six vehicles collectively will displace the use of 240,000 to 360,000 gallons of gasoline over the lifetime.

Project Costs

The total project cost for vehicle purchase and conversion to dedicated CNG was \$501,350. The total funding award to this project was \$96,200, comprising \$25,500 from the DOE and \$70,700 from the SCAQMD.

Commercialization and Applications

The technology utilized in this project has been successfully demonstrated. The expected outcome of this project is to increase awareness and viability of using alternative fuel vehicles and to promote the use of non-petroleum based fuel sources.

Construct New LNG Fueling Station in Palm Springs

Contractor

Border Valley Trading

Cosponsors

Border Valley Trading
California Energy Commission
MSRC/AB 2766 Discretionary Fund
SCAQMD

Project Officer

Larry Watkins

Background

Border Valley Trading (BVT) and its development partner, Hay Day Farms (HDF), are exporters of agri-products with daily round trips originating in Brawley and Blythe, with deliveries to the Ports of Los Angeles and Long Beach.

In 2008, in response to the local air district directives and San Pedro Port's clean truck program, both companies began transitioning their fleet operations from diesel to LNG.

Because SunLine's Thousand Palms LNG facility closed soon after BVT and HDF converted their fleets, they decided to construct LNG fueling infrastructure to support their own fleet needs (Phase 1), with the goal of expanding the facility (phase 2).

Project Objective

The project objective was to construct a new LNG fueling station in Palm Springs. The site, located at 670 West Garnet Road in the City of Palm Springs, was chosen because it was a logistically key location on the I-10.

With financial assistance from the SCAQMD and CEC, BVT initiated phase 1, which included site acquisition and grading, paving, wall and fencing construction, laying concrete, and installing electric control and security lighting as well as drainage and installation of a 6,000 gallon "Quick

Response Station" (QRS) LNG fueling unit including associated controls and appurtenances.

Phase 2 incorporated forward planning and phased development to provide for expanded fueling infrastructure in support of other truck operators seeking LNG fueling alternatives along the east-west Phoenix to LA and the south-north Imperial County to LA trips.

Technology Description

The technology used for this station was a 6,000 gallon QRS LNG portable fueling unit. The station saturates the entire contents of the storage tank immediately upon refill. This automatically occurs when the offload operator changes the selector switch from "offload" to "dispense" and variable saturation set points between 25 and 100 psig can be selected. Saturation is accomplished by circulating LNG through an ambient vaporizer and back into the tank. Once saturated, LNG is dispensed via a suitable cryogenic pump.

Status

BVT has completed the phase 1 site development and installation of the QRS fueling unit in early 2012. An operational permit was issued on March 20, 2012. Fueling capability was initially limited to a manual mode at the start of operation. An initial challenge included data connectivity of a point-of-sale (POS) system to the fuel flow metering system included with the QRS unit. After several months of diagnostics, GreenFIX America completed the installation and connection of a state-of-the art POS system that auto logs throughput and allows truck operators to purchase fuel through the use of special purchase cards (BVT and HDF) or credit cards. Working with GreenFIX America, and the support of USLandLink and the other subcontractors, BVT successfully installed the LNG fueling unit to support 40 clean burning trucks. Phase 2, which includes expanded storage and fueling capabilities, is scheduled to begin in 2013.

Throughput measured at the Palm Springs site for the first four months of operation is as follows:

| Actual LNG Throughput | | |
|------------------------------|------------------------------|-----------------------------------|
| Year | LNG Gallons Dispensed | Gasoline Gallon Equivalent |
| June 2012* | 7,500 | 5,035 |
| July 2012* | 10,000 | 6,715 |
| August 2012 | 19,300 | 12,950 |
| September 2012 | 19,300 | 12,950 |
| TOTAL | 57,100 | 37,650 |

Recent work has also included vapor recovery systems to capture methane blow-off or “boil-off” which will be collected and pressurized for CNG use at 3,600 psi. Several loads of CNG have been dispensed at this location to a local CNG operator (CV Ice) making deliveries to the Yucca and Morongo basin areas.



Figure 1: LNG Storage Tank

Results

BVT is now successfully operating an LNG fueling facility in support of 40 LNG trucks. The direct and immediate benefit is the reduction of NO_x, PM and GHG emissions. The attached table provides a representation of the reductions:

| Criteria Pollutant Emission Reduction Calculation | Border Valley | | HayDay | | TOTAL | |
|---|-----------------|--------------|-----------------|--------------|-----------------|-------------|
| | NO _x | PM | NO _x | PM | NO _x | PM |
| Annual Fuel Consumption (LNG gallons) | 40,040 | 40,040 | 41,470 | 41,470 | 81,470 | 81,470 |
| Annual Fuel Consumption (dgc) | 23,553 | 23,553 | 24,394 | 24,394 | | |
| Annual Emission Reductions (tons/year) | 1.83 | 0.037 | 1.895 | 0.038 | 3.73 | 0.75 |

Benefits

The conversion of 40 heavy-duty trucks from diesel to LNG is achieving a significant reduction of emissions within the SCAQMD’s jurisdiction as well as the Greater Southern California area.

The Palm Springs facility has the opportunity to bridge one small gap; however, continued support of clean energy programs and infrastructure remains essential to help stimulate the industry. Affordable fueling opportunities remain limited along the interstates resulting in reluctance in the private sector to convert diesel to natural gas.

Project Costs

The actual costs for phase 1 were about 10-15% higher than estimated. These costs included fire and gas detection as well as integrating a POS system with the data collector on the QRS fueling unit. BVT and its partner HDF made significant business investments in developing the Palm Springs LNG fueling facility. A summary of final project costs is as follows:

| | |
|----------------------------|--------------------|
| Phase 1 | |
| BVT | \$472,570 |
| HDF | \$472,565 |
| SCAQMD | \$251,865 |
| Phase 2 | |
| BVT | \$325,000 |
| HDF | \$325,000 |
| CEC | \$500,000 |
| MSRC/AB Discretionary Fund | \$150,000 |
| Total Project Costs | \$2,497,000 |

This investment was made both as a commitment to cleaner burning fuel and the environment, but also as an opportunity to reduce long-term operational costs through fuel savings. The SCAQMD’s support to help pay for site development costs has been critical to the project.

Commercialization and Applications

Phase 1 of the Palm Springs site will support 40 heavy-duty trucks making round trips from Imperial County and east Riverside County to the Ports of Los Angeles and Long Beach. This initial investment provided a strategic location to provide LNG fuel where very limited and difficult to access options existed. It will provide a return on cost (key to any private business activity) through the cost savings of fuel and re-fuel efficiencies based on location. This return, roughly 7 years, is based on the cost of LNG fuel at roughly 60% the price of diesel. The commitment by BVT and HDF to cleaner burning fuels was not only a business investment but an investment towards a cleaner, greener future for everyone.

Demonstrate Natural Gas-Powered Police Vehicle

Contractor

Agility Fuel Systems

Cosponsor

SCAQMD

Project Officer

Phil Barroca

Background

Mobile source emissions continue to be a major contributor to air pollution in the South Coast Air Basin. The SCAQMD's Fleet Rules provide a mandate for public fleets to purchase clean, alternative fuel vehicles when replacing or adding to their fleets; however, law enforcement and emergency vehicles are exempt from these rules and, collectively, law enforcement vehicles represent a significant amount of mobile source emissions in the basin.

Project Objective

The objective of this project was to increase awareness and use of alternative fuel vehicles in the law enforcement vehicle sector. This program was intended to demonstrate the use of a clean, natural gas-powered vehicle in a law enforcement vehicle and deploy this vehicle into daily police vehicle activities. This demonstration program is exclusive with the City of South Pasadena which will provide annual vehicle performance information and vehicle operator feedback for a period of two years.

When this project was initially approved by the SCAQMD Governing Board in 2009, the Ford Crown Victoria was the most widely deployed vehicle in law enforcement agencies in the country. This project specifically funded the purchase of a new 2011 FCV, the conversion to dedicated CNG, and a two-year demonstration of this vehicle by the City of South Pasadena. The program commenced with contract execution in the second quarter of 2012.

Technology Description

The technology in this project involves the conversion of a new gas-powered 2011 Ford Crown Victoria Police Pursuit Vehicle (PPV) to dedicated CNG. The PPV is powered by a 4.6 liter, V-8 engine. The CNG conversion is an EPA approved system by EvoTek LLC, a subsidiary of Impco Technologies, Inc. The vehicle's CNG fuel storage consists of five high pressure CNG fuel storage tanks comprising a total of 16.9 gasoline gallon equivalents (GGE) of CNG fuel. Four tanks, or 12.4 GGE are Type 1 steel tanks; the vehicle was subsequently upgraded with a 4.5 GGE Type 3 CNG fuel tank to provide the vehicle with extended range and usability. The CNG conversion and tank installations were performed under subcontract by A-1 Alternative Fuel Systems located in Fresno, CA.



**Figure 1: City of South Pasadena
CNG 2011 PPV**



Figure 2: Type 3 CNG Fuel Tank upgrade installed in trunk of PPV; 4.5 GGE of fuel capacity.

Status

The City of South Pasadena has been operating the CNG PPV since the second quarter of 2012, primarily as a K-9 unit. The vehicle has amassed 35,000 miles to date and based on conservative estimates displaced the use of more than 2300 gallons of gasoline. The City recently reported that the engine dies on occasion when the vehicle is idling at a stop; this problem is currently under review.

Benefits

Relative to its gas-powered counterpart, the CNG version of this vehicle is at least 70% cleaner in hydrocarbon plus NO_x emissions. As mentioned above, the vehicle is also displacing the use of petroleum-based fuels. Based on full-life projections of 300,000 miles for this vehicle vocation, a CNG-powered Ford Crown Victoria would displace the use of 20,000 gallons of gasoline.

Project Costs

The total amount awarded to this project was \$54,000 for the purchase of a new 2011 Ford Crown Victoria with the factory-equipped PPV package, the installation of the CNG conversion system and four CNG fuel storage vessels. An additional \$3,145 was approved for this project to purchase and install one 4.5 GGE Type 3 CNG fuel storage tank to increase the vehicle's fuel storage capacity to 16.9 GGE.

Commercialization and Applications

The technology utilized in this project has been successfully demonstrated and increased awareness to cities and municipalities and law enforcement jurisdictions on both the environmental benefits and cost benefits of using CNG in high fuel consuming vehicles.



Figure 3: City of South Pasadena CNG-powered K9 unit

Remote Sensing Measurements of On-Road Emissions from Heavy-Duty Diesel Vehicles

Contractor

University of Denver and Environmental Systems Products (now Envirotest Systems Corporation)

Cosponsors

NREL
SCAQMD

Project Officer

Wei Li

Background

It is important to determine and monitor the benefits of CARB regulations in comparison to the large sums of public funds devoted to heavy-duty vehicle (HDV) diesel emission reductions. To properly gauge the effectiveness of HOV regulations, it was deemed necessary to conduct a study to develop a database of on-road emissions from HDVs operating near ports.

Project Objective

The study was intended to update on-road HDV fleet emissions data to better characterize in-use on-road heavy-duty vehicle emissions in the South Coast Air Basin and evaluate the impact of CARB's Drayage Truck Regulation and In-Use On-Road Heavy Duty Diesel Vehicle Regulation and San Pedro Bay Ports Clean Air Action Plan (CAAP). A subsidiary goal was to compare results from two different measurement systems.

Technology Description

Two sets of remote sensing equipment were used, a University of Denver developed FEAT 3002, used for research studies, and a commercial product, the RSD 4600, made by Environmental Systems Products (ESP), now Envirotest Systems Corporation.

Remote sensing is an inexpensive method of measuring on-road CO, CO₂, HC and NO (both instruments); and NO₂, SO₂ and NH₃ (FEAT 3002 only) gaseous emissions; and UV(RSD 4600 only) and IR opacity (both instruments) from a large

number of vehicles without inconveniencing vehicle operation.

Status

Four field campaigns conducted over five years, 2008, 2009, 2010 and 2012, resulted in license plate matched records for 7078 trucks at the Port of Los Angeles Water Street exit (shown below in Figure 1) and 9189 trucks at the Peralta Weigh Station on SR91. Each campaign operated for one week at each of the two locations.

This study was successfully completed in December 2013.



Figure 1: Port of Los Angeles Weigh Station

Results

Peralta: The heavy-duty California fleet observed at Peralta continues to age and over the five year span has increased in average age by about 0.9 model years. Since 2008 the average model year of just the California fleet has gone from 2000.2 (8.1 years old) to 2003.8 (9 years old).

FEAT reported NO_x (NO+NO₂) emissions have decreased by 27% from 2008 to 2012 with the largest drop (more than 60% of the total) occurring since the 2010 measurements. For the 2008 to 2010 period, the RSD 4600 reported 11% of NO reductions compared to 13% reductions in NO reported by FEAT over the same period. RSD 4600 was not used at Peralta in 2012.

The overall trend for FEAT IR %opacity at Peralta showed no statistical change since 2008, though a closer examination by chassis model year shows that the DPF equipped trucks (chassis models 2008 and newer) have similar IR %opacity reductions as those seen at the Port though their fraction of the fleet at Peralta was still too small to reduce the overall mean. The RSD 4600 UV channel reported a 7% reduction between 2008 and 2010.

Port of Los Angeles: The fleet age at the Port changed dramatically between the sampling campaigns in 2008 and 2012, averaging almost 14 model years newer. In 2008 the average model year was 1995.6 (~12 years old) and in 2012 the average model year was 2009.3 (~ 3 years old).

FEAT reported NO_x emissions reductions of 55%, with the decrease slowing as expected since 2010 when the CAAP truck replacement was completed. The RSD 4600 observed a 56% reduction in NO compared with the FEAT instruments NO reduction of 50%.

A 54% reduction in FEAT IR %opacity was observed from 2008-2010 with no significant change during the last 2 year interval. The RSD 4600 IR and UV smoke channels reported reductions of 64% and 76% respectively, from 2008 to 2012, with most of the reduction occurring from 2008 to 2010.

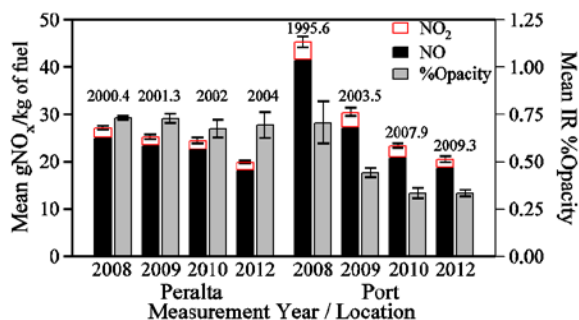


Figure 2: FEAT 3002 Mean Grams of NO and NO2 per kg of fuel (left axis) and IR %Opacity (right axis) versus measurement year.

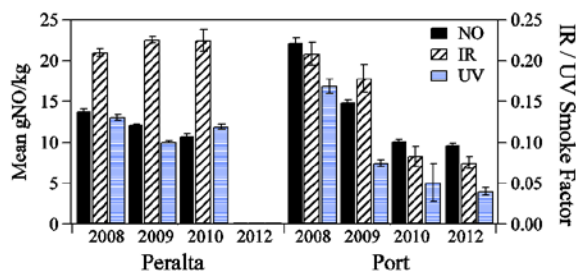


Figure 3: RSD 4600 mean Grams of NO per kg of fuel (left axis) and IR and UV Smoke Factor (right axis) versus measurement year.

Comparison of FEAT 3002 and ESP 4600 Results

FEAT 3002 and RSD 4600 emission measurements were binned by model year for each campaign and results compared. Results for NO showed good correlation while the correlations for other pollutants were variable.

Benefits

The remote sensing technology is uniquely able to inexpensively monitor the heavy-duty fleet and ensure emission reduction benefits are being achieved and maintained. The technology is able to measure and compare emissions from differently fueled vehicles. These capabilities allow public agencies to make regulatory decisions with better information and with greater confidence.

Project Costs

| | SCAQMD | NREL | Total |
|------------------------------------|------------------|------------------|------------------|
| DU FEAT Measurements and Reporting | \$161,041 | \$161,041 | \$322,082 |
| ESP RSD Measurements | \$ 38,000 | - | \$ 38,000 |
| Total | \$199,041 | \$161,041 | \$360,082 |

Commercialization and Applications

Both FEAT 3002 and RSD 4600 systems reported similar trends and both are well suited for monitoring progress in HDV on-road emissions that are otherwise expensive and difficult to monitor. The FEAT unit has the advantage of measuring NO₂ as well as NO and of measuring SO₂, and ammonia (NH₃). The RSD 4600 UV smoke channel was more sensitive to particulate emissions than the IR channels of either system. The addition of an NO₂ channel to the RSD 4600 would be beneficial and is being undertaken by the manufacturer.

In-Use Emissions Testing & Demonstrate Retrofit Technology for On-Road Heavy-Duty Engines

Contractor

West Virginia University Research Corp

Cosponsors

CARB

Ports of Los Angeles and Long Beach

SCAQMD

West Virginia University

Project Officer

Adewale Oshinuga

Background

On-road heavy-duty engines are now subject to the 2010 U.S. EPA emissions standards of 0.01 g/bhp-hr PM and 0.20 g/bhp-hr NO_x. Some engine manufacturers are using emission credits which allow them to produce a mixture of engines certified at, below, or above 0.20 g/bhp-hr NO_x. While recent limited-scale studies have shown reduced NO_x and PM emissions from trucks powered by 2010 compliant engines, other studies indicate a potential increase in some exhaust emissions. As such, additional studies are required to assess the impact of the technologies on emissions from engines used in a variety of applications, particularly since the number of these engines will continue to increase in the future. In December 2010, the SCAQMD awarded contracts to West Virginia University (WVU) and University of Riverside, California (CE-CERT) to conduct in-use emissions testing, and if needed, to evaluate emission reduction potential of retrofit technology on existing and new on-road heavy-duty engines. In 2011 the emission testing study was amended to include additional funds from the Ports of Los Angeles and Long Beach to conduct additional in-use emissions tests of heavy-duty drayage vehicles and assess in-use emissions from a 2010 U.S. EPA compliant heavy-duty vehicle as the vehicle is driven over a 2,500-mile route between Morgantown, WV, and Riverside, CA.

Project Objective

The primary objective of this study was to

evaluate the emissions rates of regulated pollutants from current model year heavy-duty diesel, natural gas and dual-fueled vehicles operating under different vocations. Specifically:

1. Assessment of emissions rates of CO, CO₂, NMHC, CH₄, NO_x and PM emissions from vehicles operating as port drayage application, transit buses and refuse trucks.
2. Characterize ammonia emission rates from stoichiometric-fueled natural gas vehicles and urea-SCR diesel vehicles.
3. Characterize PM number concentrations and formaldehyde, benzene, toluene, ethyl benzene and o-p xylene emissions.
4. Develop a retrofit strategy for reduction of ammonia emissions from natural gas engines.
5. Assess in-use emissions from a 2010 U.S. EPA compliant heavy-duty vehicle as the vehicle is driven over a 2,500-mile route between WV and CA.

Project Description

WVU and CE-CERT were contracted by SCAQMD to conduct heavy-duty chassis dynamometer testing to achieve the above-mentioned objectives. The test matrix included vehicles from eight engine technology categories distributed among four different vocations. A total of 24 heavy-duty vehicles were tested as part of this study. WVU used the transportable heavy-duty chassis dynamometer stationed at Ralph's Distribution Center at Riverside for this study as shown below in Figure 1.



Figure 1: Test Vehicle during chassis dynamometer testing

As part of the in-use emissions testing study, WVU was contracted to collect data during a cross-country truck operation for over 2,500 miles from Morgantown, WV to Riverside, CA. Figure 2 shows the test vehicle in Denver, CO, during the cross-country study.



Figure 2: Test Vehicle set up for the cross-country data collection

Status

The testing phase of the project was completed in February 2013.

Results

First, the in-use emissions testing study showed that NO_x emissions from natural gas vehicles with TWC and the dual-fuel HPDI equipped with DPF and SCR to be lower 2010 compliant diesel engines both in term of distance-specific and brake-specific emissions. Sustained activity of the TWC under all operating conditions contributed to orders of magnitude lower NO_x emissions. The overall lower engine out NO_x emissions from the dual-fuel HPDI engine reduced the effect of SCR inactivity on the NO_x emissions from this engine. Second, exhaust temperature characteristics over the drayage cycle did not support sustained SCR activity for the diesel with SCR, while the stoichiometric natural gas with TWC exhibit orders of magnitude lower NO_x emissions over all three drayage activity. Third, the dual-fuel HPDI vehicles also exhibited lower NO_x even during periods of no SCR activity. From a perspective of port drayage application the natural gas fueled vehicles will contribute to lower NO_x emissions during activities inside the port and local urban type operation. Fourth, diesel vehicles with SCR require sustained vehicle speeds and higher operating loads to achieve lower NO_x emissions. Fifth, stoichiometric natural gas engines were characterized by orders of magnitude higher ammonia emissions than diesel vehicles equipped with SCR. Sixth, N₂O emissions from natural gas

engines were observed only during the warm-up phase of the three-way catalyst. No significant N₂O emissions were detected from any diesel technology vehicles. Finally, particle size distribution analysis showed particle emissions from stoichiometric natural gas engines and DPF equipped diesels to be of the same order of magnitude as ambient air concentrations. The results also indicated the impact of engine component ageing on ultrafine particle emissions.

Results of the cross-country study showed that the NO_x conversion efficiency of the SCR after-treatment system to be on an average 83-88% during the course of the test campaign. Sustained temperatures of greater than 250 Deg C contributed to high SCR activity at highway driving conditions. One of the shortcomings of the cross-country study was the lack of high traffic densities in major sections of the route. Figure 3 shows the SCR after-treatment efficiency and the measured SCR intake exhaust gas temperatures during the entire cross-country test campaign.

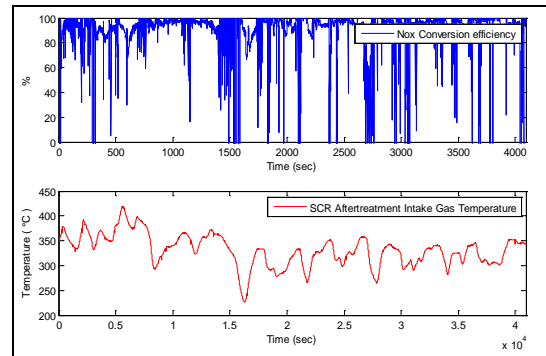


Figure 3: NO_x conversion efficiency of SCR and exhaust gas temperatures during cross-country study

Benefits

The study provided a comprehensive understanding of emission rates of current technology heavy-duty diesel and alternative fueled engines operating in Southern California. In addition, the study provided a reference for updating federal, state and local in-use emissions inventories.

Project Costs

The total project cost was \$1,982,162, of which SCAQMD's cost was \$1,459,484. CARB, POLA, POLB, WVU and UCR provided the remaining \$522,678 in direct and in-kind contributions.

SCAQMD Contract #11612

August 2013

In-Use Emissions Testing & Demonstrate Retrofit Technology for On-Road Heavy-Duty Engines

Contractor

University of California, Riverside

Cosponsors

CARB

Ports of Los Angeles and Long Beach

SCAQMD

University of California, Riverside

Project Officer

Adewale Oshinuga

Background

On-road heavy-duty engines are now subject to the 2010 U.S. EPA emissions standards of 0.01 g/bhp-hr PM and 0.20 g/bhp-hr NO_x. Some engine manufacturers are using emission credits which allow them to produce a mixture of engines certified at, below, or above 0.20 g/bhp-hr NO_x. While recent limited-scale studies have shown reduced NO_x and PM emissions from trucks powered by 2010 compliant engines, other studies indicate a potential increase in some exhaust emissions. As such, additional studies are required to assess the impact of the technologies on emissions from engines used in a variety of applications, particularly since the number of these engines will continue to increase in the future. In December 2010, the SCAQMD awarded contracts to West Virginia University (WVU) and University of Riverside, California (CE-CERT) to conduct in-use emissions testing, and if needed, to evaluate emission reduction potential of retrofit technology on existing and new on-road heavy-duty engines. In 2011 the emission testing study was amended to include additional funds from the Ports of Los Angeles and Long Beach to conduct additional in-use emissions tests of heavy-duty drayage vehicles and assess in-use emissions from a 2010 U.S. EPA compliant heavy-duty vehicle as the vehicle is driven over a 2,500-mile route between Morgantown, WV, and Riverside, CA.

Project Objective

The objectives of this study were to conduct in-use

testing of heavy-duty natural gas and diesel vehicles while measuring: 1) regulated emissions; 2) unregulated emissions such as ammonia and formaldehyde; 3) greenhouse gas levels of CO₂ and N₂O; and 4) ultrafine PM emissions.

Project Description

WVU and CE-CERT were contracted by SCAQMD to conduct heavy-duty chassis dynamometer testing to achieve the above-mentioned objectives. The test matrix included vehicles from eight engine technology categories distributed among four different vocations. A total of 24 heavy-duty vehicles were tested as part of this study. The testing protocol involved measuring emissions while the vehicles followed driving cycles that were better at representing the in-use emissions than those used for certification. All testing was carried out on a chassis dynamometer with measurements being made with a laboratory meeting 40 CFR Part 1065 specifications.



Figure 1: Truck being tested on chassis dynamometer

Status

The testing phase of the project was completed in May 2013.

Results

Emissions of PM and NO_x

- PM emissions from all diesel vehicles and driving cycles met the 10mg per bk-hp-hr

certification limit. For inventory purposes, the measured value on a per-mile basis was ≤ 2 mg/mi. PM emissions for the single LPG vehicle found in the South Coast Air Basin was ~ 140 mg/bk-hp-hr on the UDDS cycle.

- NO_x emissions depended on the certification value, application/driving cycle and the manufacturer. With diesel engines used for goods movement, emissions were lowest with installed SCR technology; however, increases up to 500% were measured when the temperature of the SCR was $< 325^{\circ}\text{C}$. Vehicles using only cooled EGR were certified to higher levels and surprisingly showed emissions for near-port operations that were 250% higher than for service to regional distribution centers. An overall lower average exhaust temperature is typical of vehicles operating close to port where a significant amount of queuing takes place.
- Navistar engines all had emissions exceeding the compliance level. News in May 2013 indicated that Navistar exceeded the limit established for engines certified under the EPA nonconformance penalty (NCP) rule, thus resulting in a recall of the Navistar engines. Other news indicated Navistar's approach to use EGR and pay fines as the NO_x emission solution was abandoned in favor of adopting SCR technology like the other engine manufacturers. Navistar's technology change to SCR will allow them to comply with the strict NO_x certification levels.
- NO_x emissions from diesel refuse haulers using SCRs showed most of the NO_x was produced during the compaction portion of the in-use cycle as exhaust temperatures were relatively low when compared with exhaust temperature during the transit portion of the cycle
- An important finding was the percentage of NO_x as NO₂ ranged from 10% to near 90% with most of the data showing high levels of NO₂, especially with an SCR. These values can be compared with the retrofit rule where the NO₂ levels were limited to 20% above the baseline levels.

NH₃, Hydrocarbons, Toxics and Fine PM

- NH₃ emissions were very low; ranging from about 10 to 100 mg/mi over the range of vehicle/cycle combinations. All vehicles showed cycle averaged raw NH₃ emission concentrations < 10 ppm.
- The emission factors for the THC, CH₄, NMHC and toxics were very low for all

vehicle/cycle combinations with a DOC/DPF installed as expected from the ACES project that showed a 98% reduction from diesel engines without DPFs. THC, NMHC, and CH₄ emissions were at or below 0.45 g/mi, 0.30 g/mi, and 0.20 g/mi, respectively.

- Real-time PM measurements suggest the reported reference PM emission rate may be lower due to low filter weights for DPF equipped vehicles.
- Fine particles show higher concentrations during the first 200 seconds of a cold start. Hot stabilized engines show similar results between test cycles. The fine particles appear to be higher for the regional port cycle where extended high loads were experienced by the after treatment systems.

Greenhouse Gas & Fuel Economy

- For engines burning diesel fuel, the GHG and fuel economy are represented by CO₂ since the very low methane emissions do not measurably contribute to GHG. However with LPG, methane emissions represented $\sim 8\%$ of the GHG. Fuel economy ranged from 2.6 to 7.6 mpg for the range of vehicles and cycles, with goods movement vehicles having the highest fuel economy for the regional cycle. The refuse trucks showed slightly higher fuel economy values for the RTC compared to the UDDS.
- The project measured N₂O, another greenhouse gas, and levels were very low for all vehicles and were about one to two standard deviations above ambient concentrations, as expected.

Benefits

The project met the intended goals and provided direct information on the difference between in-use and certification emission levels for trucks operating in the Basin. The results point to a need to lower the emissions from HDDT even with the current strict emission standards, especially when the trucks are operating outside the not-to-exceed zones. Otherwise, this region will not make the planned progress towards cleaner air.

Project Costs

The total project cost was \$1,982,162, of which SCAQMD's cost was \$1,459,484. CARB, POLA, POLB, WVU and UCR provided the remaining \$522,678 in direct and in-kind contributions.

Identify Cellulosic Biomass Feedstocks

Contractor

University of California, Riverside / CE-CERT

Cosponsors

Ford Motor Company Endowed Chair
SCAQMD

Project Officer

Brian Choe

Background

California consumes more transportation fuel than any other state, with gasoline alone responsible for 14.6 billion gallons in 2011. High fuel use produces high greenhouse gas (GHG) emissions that feed global climate change. The national Renewable Fuel Standard (RFS2) mandates alternative fuels with lower GHG emissions than motor gasoline, and State Low Carbon Fuel Standards (LCFS) require carbon intensity to drop 10% by 2020. The California Air Resources Board and California Energy Commission note that biofuels from non-edible abundant lignocellulosic biomass in the state can reduce GHG emissions by as much as 75% over conventional fuels.

Project Objective

The objective was to identify state lignocellulosic residues and wastes with favorable characteristics for conversion into biofuels using University of California, Riverside (UCR) high throughput (HT) systems through four main tasks: (1) select promising cellulosic biomass, (2) analyze their sugar content, (3) evaluate their recalcitrance, and (4) design a HT hydrolysis and dehydration reaction system.

Technology Description

Four parameters, adapted from the 2011 National Renewable Energy Laboratory (NREL) techno-economic report, defined the criteria for promising biorefinery feedstocks: (a) potential availability of at least 773,000 dry tons/year, (b) distribution density over 98.5 dry tons/mi², (c) minimum structural carbohydrate content of 59%, and (d) a sugar yield at or above 90% (wt/wt). Two national and two regional studies were utilized to estimate the availabilities and county

level distribution densities of biomass types and allow selection of biomass materials satisfying the criteria. Next, the UCR downscaled HT system was applied to simultaneously determine sugar contents of up to 16 leading biomass candidates with 3 replicates of each. UCR's HT pretreatment and enzymatic hydrolysis (HTPH) device shown in Figure 1 was then applied to measure actual sugar release from biomass types that possessed more than 59% sugar by weight based on one pretreatment with just hot water at 180°C and another with 0.5% dilute sulfuric acid at 160°C followed by enzymatic hydrolysis with a high loadings of Spezyme® CP cellulase and Multifect® Xylanase xylanase. Biomass that released more than 90% of total sugar content was deemed most promising. Finally, a high-pressure steam chamber was designed and fabricated to operate at up to 260°C and 665 psig, thereby allowing future screening for production of reactive intermediates (RIs) that can be converted into hydrocarbon fuels.



Figure 1: UCR's HTPH device

Status

The project was completed in November 2013. The report contains details of the four tasks outlined in this summary. All tasks needed to identify promising sources of biomass in California were completed. The kinetic modeling study originally planned was not undertaken as selection of promising candidates was possible without this additional information.

Results

Of the more than 60 biomass types evaluated, 9 cleared the first threshold for availability in excess of 773,000 dry tons/year: municipal solid wastes (MSW) as mixed paper with mixed cardboard and processed wood wastes; agricultural residues of rice straw, heifer, and dairy cattle manures; and logging, thinning, and primary and secondary mill residues from forestry. Together, these made up more than two-thirds or 68% of the state's 23 million dry tons of cellulosic residues and wastes.

Out of these 9 biomass types, rice straw qualified as the most promising single biomass feedstock candidate. Field and seed crop rice straw had an average potential availability approaching 1 million dry tons/year and a distribution density ranging from a low of 110 dry tons/mi² to a high of 131 dry tons/mi² concentrated in small clusters of 6-7 contiguous rice producing counties (i.e., Glenn, Butte, Colusa, Sutter, Yolo, Yuba, and Placer Counties) in the Central Valley. Rice straw also showed a total glucan, xylan, mannan, galactan, and arabinan sugar content that exceeded 59% (wt/wt). Furthermore, yields of the dominant sugars of glucose, xylose, galactose, and mannose was as high as ~92% (wt/wt) when subjected to dilute sulfuric acid HTPH at 160°C.

Another promising feedstock is MSW mixed paper. Although sugar yields were limited to 60-70% (wt/wt), such sugar yields were possible without pretreatment, the single most expensive step in bioethanol production from cellulosic biomass.

The remaining biomass types did not meet criteria for adequate distribution density (i.e., heifer manure, MSW processed wood wastes, secondary mill residues, logging slash, and thinnings), sugar content (i.e., dairy cattle), and sugar yields (i.e., MSW mixed cardboard and primary mill residue).

It is important to note that the study had some limitations that deserve more attention. First, combining several of the biomass types that are available in particular areas would likely result in the total availability meeting the selection criteria. In addition, although the assessment took into account sustainability and handling losses, it did not include the impact of current consumptions in other non-biofuel sectors or the costs of gathering biomass from the source, which could alter availability. Also, the biomass evaluation depended on the particular samples that could be obtained, and more extensive sampling could ensure that the results are more representative at

the state level. And energy crops could greatly increase the impact. However, more extensive studies of this nature were beyond the scope of this project.

Benefits

Assuming a 76% of theoretical conversion of biomass to ethanol, rice straw, which constitutes 4.3% (wt/wt) of cellulosic biomass now available in California, would generate 77 million gallons/year of bioethanol, equal to 5.9% (vol/vol) of the 1.3 billion gallons of ethanol consumed by the state in 2010. If processes were available to release sugars from the more recalcitrant lignocellulosic materials in California, softwoods of Douglas fir and redwood primary mill residues, along with MSW mixed papers and cardboards, as much as 351 million gallons or 27% of the state's 2010 ethanol consumption could be generated. Thus, even though, such materials did not satisfy all four criteria, it is important not to ignore them in light of such considerations.

Project Costs

The project was completed at a cost of \$250,000, of which SCAQMD provided \$235,000 and the Ford Motor Company Endowed Chair provided \$15,000.

Commercialization and Applications

This study shows lignocellulosic biomass could contribute substantially to meeting California GHG reduction targets. In addition, even greater impact would likely be possible through deconstruction of more recalcitrant materials to the RIs furfural, levulinic acid, and 5-hydroxymethylfurfural (5-HMF) for conversion into infrastructure compatible fuels. The HTHD system developed in this project is a valuable tool for efficient screening of multiple materials at favorable conditions for RI formation.

Passenger Vehicle Replacement Tire Efficiency Study

Contractor

Energy Solutions

Cosponsors

Energy Solutions
SCAQMD

Project Officer

Aaron Katzenstein

Background

Passenger vehicle low-rolling resistance replacement tires (herein referred to as “fuel efficient tires”) provide significant opportunities to reduce air pollutants and carbon dioxide while saving consumers fuel and money. Fuel efficient tires are technically feasible and common for new vehicles (due to environmental regulations) with a very high benefit/cost ratio and rapid payback. However, they face significant market barriers in the replacement market. This is because manufacturers face a modest cost increase, tire retailers lack a significant incentive to stock and promote fuel efficient tires and consumers have limited resources to identify these tires.

Project Objective

The objective of this study was intended to:

- Quantify environmental benefits of fuel efficient tires, including expected fuel savings and air quality and greenhouse gas (GHG) benefits;
- Define fuel efficient tire characteristics; and
- Evaluate a fuel efficient tire incentive program design.

Technology

Rolling resistance refers to the force needed to move a tire forward and overcome internal deformations and friction with the road. Rolling resistance coefficient (RRC) is a common benchmark and is determined by the force needed to overcome rolling resistance divided by the load on the tire. Technologies to reduce rolling resistance without sacrificing traction include increasing the use of natural rubber with dispersed silica. Low-rolling

resistance tires are widely deployed on new vehicles by Original Equipment Manufacturers (OEMs) and U.S. EPA predicts a further 10% improvement in this market by 2015. Thus a 25% per vehicle reduction in replacement market tire rolling resistance is technically feasible as shown in Figure 1 from the study. A 20% overall reduction is feasible including vehicles with specialty tires.

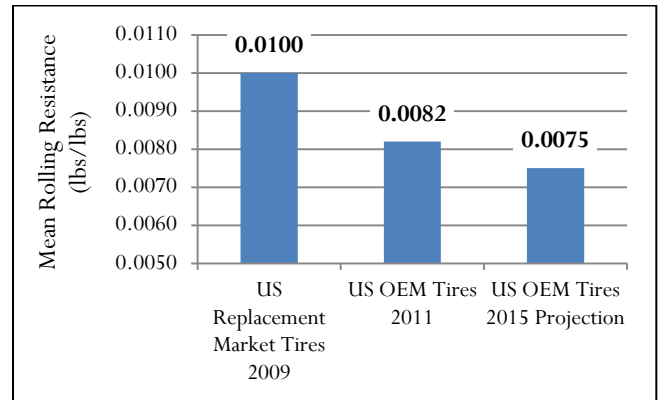


Figure 1: Replacement Market Passenger Vehicle Tire Rolling Resistance Coefficient (RRC) Compared to OEM Median RRC

Sources: RMA 2009, Lutsey 2012, Energy Solutions Calculation

Status

The study was completed in October 2013, and successfully achieved all objectives.

Results

An overall 4% fuel economy benefit can be achieved for the fleet of vehicles operating on replacement tires. Estimated air quality benefits from one year of full deployment include 1,500 tons of ozone precursor reductions and 1.6 million tons of greenhouse gas (GHG) reductions. Manufacturers are not expected to trade-off rolling resistance for other attributes (safety/traction and durability) and appropriate program design can discourage trade-offs.

An incentive and education program can achieve benefits that are proportional to participation rates. Retailers will play a key role due to customer interactions and stocking decisions. An electronic

processing system, with purchase data submitted by retailers, will also play an important role.

Benefits

Expected benefits far exceed costs under a wide range of scenarios. For instance, a hypothetical one year program with a 10% penetration rate at a cost of \$12.50/tire (\$50/vehicle) would cost about \$9 million (this example is not intended to predict actual participation rates). This hypothetical program would achieve net lifetime benefits of \$50-\$64 million at a benefit/cost ratio of about 7:1 due to fuel savings, GHG reductions and criteria pollutant benefits. Air quality benefits alone (including GHG), using the lower of two valuation methods in the study, would roughly equal costs. Net benefits would scale up with higher penetration rates, even if somewhat higher costs per vehicle were necessary. This extremely high benefit/cost ratio exceeded initial expectations.

Project Cost

SCAQMD project cost was \$10,000. Energy Solutions provided a \$6,000 cost-sharing contribution in recognition of the importance of this project.

Commercialization and Application

Fuel efficient tires are ready for commercial deployment in the replacement market and regulators

in the European Union, Japan and South Korea have set a precedent with policies to overcome market barriers in overseas markets. An SCAQMD incentive and education program would help overcome market barriers locally and the following implementation steps are recommended:

1. Determine incentive levels and structure based on available funding levels and further retailer engagement.
2. Test tires for rolling resistance to support program design and prepare an initial list of eligible products and allow manufacturers to submit data for additional products.
3. Evaluate potential designs for an on-line system that accepts retailer sales data, validates qualifying product purchases and processes rebate applications.
4. Support state efforts to promote fuel efficient tires and federal efforts to develop a customer information and labeling program. In the meanwhile, the SCAQMD can consider the development of educational materials to complement a potential local incentive program.

Showcase: Demonstration of NO_x and PM Emission Control Technology on Diesel-Powered Construction Equipment

Contractor

Griffith Construction Company

Cosponsors

Griffith Construction Company
Nett Technologies Inc
Puritech GmbH
SCAQMD

Project Officer

Richard Carlson

- No interference with operator visibility, access or safety.
- Equipment performance and functionality equivalent to non-retrofitted configuration.
- Operation for a minimum of 1,000 hours with CARB monitoring.

Technology Description

Two technologies were selected: 1) a combined DPF and SCR technology from Nett Technologies and 2) a DPF technology which included fuel injected in front of an oxidation catalyst from Puritech.

The Nett BlueMAX Ultra system uses a fuel burner to raise the exhaust gas temperature high enough during normal operation to continuously regenerate the DPF. Regeneration is initiated automatically based on exhaust pressure, flow rate and temperature. The Nett BlueMAX Plus SCR system uses a passive continuously regenerated DPF while the excavator is operating normally and is intended for units with higher exhaust gas temperatures. The SCR system is the same on both systems and injects urea in front of an SCR catalyst based on NO_x concentration, exhaust temperature and exhaust flow. Emission reductions up to 90% for NO_x and PM are claimed by Nett.

The PURImax includes a DPF preceded by an oxidation catalyst and a diesel fuel injection system. Diesel fuel is injected to maintain the exhaust temperature high enough for passive DPF regeneration and also to reduce NO_x, particularly NO₂. Fuel is automatically injected according to exhaust temperature and exhaust flow rate while the equipment is operating normally. Puritech claims 90% PM reduction and 30% NO_x reduction.

Background

Off-road equipment represents an important source of emissions in the South Coast Air Basin. Based on the California Air Resources Board (CARB), there were approximately 68,600 pieces of diesel-powered construction equipment in the Basin in 2006, which together produced approximately 120 tons per day of NO_x and 7.5 tons per day of PM emissions.

The Showcase was a cooperative program between the SCAQMD, MSRC, CARB, participating off-road equipment fleets and control technology providers to demonstrate the effectiveness and durability of emission control technologies for off-road construction equipment.

The SCAQMD awarded a contract to Griffith Construction to participate in the Showcase Program to demonstrate NO_x and particulate matter (PM) control technologies on five off-road vehicles.

Project Objective

The objective of this project was to demonstrate after-treatment NO_x and PM emission control systems for off-road construction vehicles. The demonstration included the following goals:



Figure 1: DPF/SCR Catalyst on Loader

Status

The five retrofit systems were installed on the off-road equipment. The Nett BlueMAX Ultra SCR system with actively regenerated DPF was installed on two Tier 1 Caterpillar TH103 rough terrain forklifts in 2009 and 2010. However, the systems were removed in 2011 because rough terrain forklifts were not well suited for the Nett retrofit system due to the system’s high electrical demand when running, the intermittent/short run time duty cycle of the forklifts, and their low average engine power. The result was that the forklift batteries frequently ran down and the power demand for battery charging and operation of the retrofit system exceeded the capacity of the alternators. The two forklift systems only accumulated a few hundred hours.

The Nett BlueMAX Plus SCR system with passively regenerated DPF was installed on a Tier 3 Caterpillar 330DL excavator in 2013 and has accumulated approximately 600 hours. A low NO_x efficiency alarm for the SCR system was reported several times but has been corrected by a software change. There were no problems with the DPF.

The Puritech PURImax DPF was installed on one Tier 1 Caterpillar 988G rubber-tired loader and one Tier 3 Caterpillar 950H rubber-tired loader in 2012. The Tier 1 loader has accumulated nearly 3,000 hours and the Tier 3 loader has accumulated over 1,800 hours. Both have operated without problems and DPF cleaning has not been required.

Results

No emission measurements were performed on these systems because CARB was unable to provide a portable emission measurement system as originally planned. The demonstration showed

that off-road equipment can be successfully retrofitted with retrofit devices that reduce both PM and NO_x provided they are compatible with the specific equipment duty cycle and configuration.

Benefits

The benefits of this demonstration are mainly qualitative since emission measurements were not performed. The project demonstrated that retrofit systems that reduce both NO_x and PM can be installed and operated successfully on off-road equipment. As a result, retrofit can remain an option for future emission reductions.

Project Costs

| Total Project | SCAQMD | Griffith |
|---------------|----------|----------|
| \$191,450 | \$92,750 | \$98,750 |

Additional non-monetary cost-share was provided by Nett and Puritech for maintenance of their systems.

Commercialization and Applications

CARB verification is required for commercialization in California. The technology providers are currently pursuing CARB verification for off-road engine applications. The Nett SCR system is verified by EPA for off-road mobile applications. A Nett DPF is verified by CARB for stationary engines. The PURImax system is verified in Europe. The systems demonstrated in the project are commercially available outside California.

Develop & Demonstrate Selective Catalytic Regeneration Technology for NO_x and PM Emissions Control on Heavy-Duty Trucks

Contractor

Johnson Matthey Inc

Cosponsors

SCAQMD
U.S. EPA

Project Officer

Jeff Cox

Background

There is a great deal of test data and field experience that demonstrate the performance and reliability of passive technologies for the reduction of PM. There has been little data collected that demonstrates the performance and impact on fleet operations of the newer retrofit NO_x reduction technologies using SCR. A demonstration of the emission reduction and the impact on fleet operations of these new technologies is necessary to evaluate the potential impact of the retrofit technology.

Project Objective

This project was undertaken to demonstrate the emission reduction potential with a retrofit 4-way emission control technology on 35 heavy-duty diesel trucks operating in the South Coast Air Basin. Since SCR based NO_x reduction is effected by the exhaust temperature profile of the application, special attention was paid to the relationship between system performance and exhaust temperature. Of secondary concern is the impact that such a technology will have on a fleet from an operation and maintenance standpoint.

Technology Description

Johnson Matthey (JM) has developed a product that combines their continuously regenerating technology (CRT) with urea-based selective catalytic reduction (SCR) to retrofit on heavy-duty diesel vehicles. The SCRT consists of several subsystems; CRT, SCR catalyst module and urea dosing system.

The CRT was previously verified by CARB as a level 3 PM control device (>85% reduction) that also meets the 20% NO₂ requirement for 1998-

2002 MY heavy-duty diesel engines. The SCR system uses NH₃, carried on the vehicle as urea, to reduce NO_x over a vanadium-based catalyst. The precise air assisted injection of urea is performed using an OE dosing pump controlled by an ECU developed by JM.

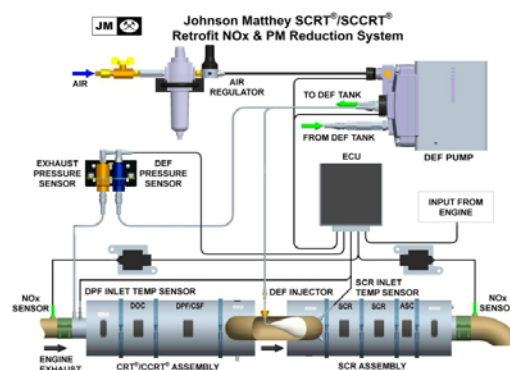


Figure 1: System Schematic

Status

The phases of this project were:

- CARB test plan was completed and submitted on September 15, 2010, for vanadium. There was an SCR catalyst formulation change that occurred during the program. All program field installations were vanadium SCR.
- 25 systems were installed and operated on trucks within 5 fleets. The trucks were equipped with Caterpillar C12, Cummins ISM, Mack E7 or MBE OM906LA engines built between 1999 and 2003.
- Chassis dyno emissions testing that was originally part of the program was cancelled.



Figure 2: Universal Application Mounted System

Changes to the CARB On-Highway Truck and Bus 2010 Regulation occurred during this program. The previous interim 2007 NO_x standard was dropped and instead required a direct transition to a 2010 NO_x standard.

Potential program participating fleets dropped out with the consideration of installing a retrofit PM device only as a route to rule compliance with less complexity than the JM SCRT system with post program upgrade costs. The balances of system installations against the program were not complete because the SCRT CARB experimental operational permit expiration date and the CARB verification timing were not aligned, requiring system removals.

Results

Emissions data was gathered using NO_x sensors to compare system out and engine out NO_x levels during actual operation. The daily operational NO_x reduction was as high as 85% as seen below.

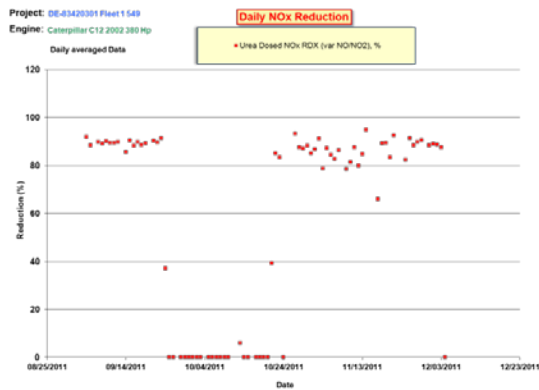


Figure 3: Daily NO_x reduction during SCRT durability trial

Other information generated by the project included:

- Verification that 70% NO_x reduction can be achieved with a CRT inlet temperature over 240°C for 40% of the operating time.
- A universal Class 7/8 system bracket design was integrated on the majority of participating vehicles.
- Bracket system durability failures were observed in a challenging bulk hauling application that experienced some off-highway unpaved surfaces when g loads exceed 7g's.
- Wire splices in the electrical harness had failure issues during installation where harness routing had aggressive bend radius during installation.

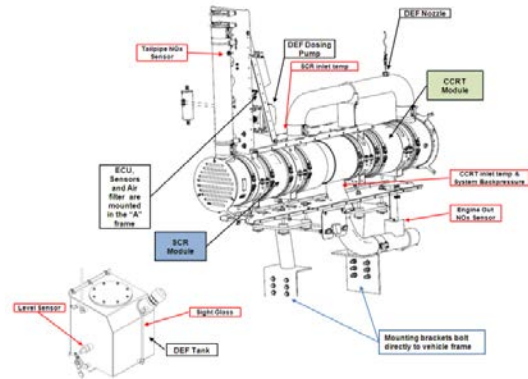


Figure 4: Vehicle Integration Application Schematic

- DEF connections (flareless tube, pipe and JIC fittings) from tank to pump proved to be a challenge at initial system commissioning requiring some post installation service requiring downtime.
- The installation location and orientation of the tailpipe NO_x sensor was demonstrated as unreliable in some installations.

Benefits

Besides the percentage of NO_x reduction shown, the data gathered during this program was able to show that some applications with 15 hour shifts could remove as much as 13 lbs. of NO_x per daily average.

Project Costs

Total project cost was \$1,200,000, of which SCAQMD contributed \$300,000 along with pass-thru funding provided by U.S. EPA in the amount of \$900,000.

Commercialization and Applications

This demonstration program identified areas in the system that needed improvement like the wiring harness, DEF line connection methods and tailpipe NO_x sensor orientation to increase the system reliability. The universal class 7/8 bracket design system behind the vehicle cab integrated well with various over-the-road applications for bulk goods delivery. Certain vehicle applications with excessive operational g loadings challenged the bracket systems where improvements are required before commercialization. The universal bracket design allowed for the system to be assembled with common parts and the price of the system to be lowered because of better volume purchasing.

CSULB CEERS Student Education Study to Assess the Effects of a Humid Air System with an Exhaust Scrubber on Diesel Emissions

Contractor

CSULB Foundation

Cosponsor

SCAQMD

Project Officer

Alfonso Baez

Background

Humid air system or fumigation is an effective approach in reducing diesel NO_x emissions. In this method, water vapor is injected in the intake air supplied to the engine cylinders. The process reduces the local temperature in the cylinder and raises the specific heat of the air-fuel mixture which also contributes to the elimination of the hot spots in the engine cylinder. With decreased temperature, NO_x reduction is achieved. With an optimized system, fumigation can reduce NO_x emission without significant increases in hydrocarbon emissions. Other benefits of the process include longer life of the engine components due to reduced cycle temperature and reductions in carbon deposits.

Air misting has been used to remove dust particles in the air. In general, fogging and air misting could reduce concentration of large particles of 2-10 microns but not the smaller ones. One of the effective methods for removing small particles is the use of an electrostatic scrubber. In this method, the droplets entering the scrubber region are electrically charged which results in attraction of the particles to the droplets and their sedimentations.

Project Objective

The objective of the project was to investigate the combined effects of the humid air system and an exhaust fog scrubber or an electrostatic fog for significant reductions in both NO_x and PM emissions of diesel engines.

Technology Description

The experiments were performed in the diesel engine laboratory of the CEERS/Mechanical and Aerospace Engineering Department. A Vanguard 3-cylinder naturally aspirated liquid-cooled diesel

engine connected to an electric dynamometer with a maximum output power of 20 brake horse power (BHP) at 3600 rpm was used for the investigations. The experiments were performed at two different BHP of 5.3 and 8.8. Due to the high freestanding resistance by the dynamometer, it was not possible to run the experiments at a higher load.

The gaseous emissions were measured with a Horiba PG-250 emission analyzer. The exhaust PM measurements were performed in two different methods. The first was a direct measurement with a TSI DusTrak aerosol monitor (Model 8520). The unit is supplied with three different inlet nozzles for different size particle measurements. For the present investigations, the 2.5 μm inlet nozzle was used.

The second method for PM measurements was using a dilution tunnel connected to a cyclone with a Teflo filter (Figure 1). The raw exhaust gas was transferred via the sampling pilot tube to the dilution tunnel via a heated transfer tube. The dilution tunnel was also supplied with filtered dry air equipped with temperature, pressure, and flow control sensors. Two stainless steel tubes of 0.635 cm ID were used for sampling the diluted flow downstream of the venturi. One tube was connected to the Horiba PG-250, and another to the cyclone. 47 mm Teflo filters as recommended in 40 CFR 1065 were used. The Teflo filters were conditioned (dried) in a uniform temperature at 72F inside a class 10,000 clean room for at least 24 hours both prior to and after the experiments before weight measurements. Weight measurements were performed with a Mettler-Toledo MT5 analytical microbalance, provided by the UCI laser center.



Figure 1. Dilution Tunnel and Horiba 250 Emission Analyzer

The humid air intake was generated using a Sunpentown humidifier (Model SU-2000) which injected mist to the intake air of the engine at a rate of 6.05 cm³/min at 70 F. The level of humidity at the engine air intake was measured with an Omega RH 32, temperature/humidity meter. A 60% relative humidity for the intake air could be maintained.

The electrostatic fog was produced with a newly designed L-shaped static generator rod connected to a variable voltage AC generator. Figure 2 shows the experimental set-up.



Figure 2. Mixing box

Status

The project has been completed in March 2013.

Results

Tables 1 and 2 show exhaust emissions and percent changes of NO_x and PM for the highest BHP with two different methods of PM measurements. These cases are:

- C1. Raw exhaust (Exh),
- C2. Exhaust with humid air system (Exh&Hum),
- C3. Exhaust with exhaust fog scrubber (Exh&Fog),
- C4. Humid air intake and exhaust fog scrubber (Exh&Hum&Fog),
- C5. Exhaust with electrostatic fog scrubber (Exh&Fog&Elec), and finally
- C6. Exhaust with humid air intake and electrostatic fog scrubber (Exh&Hum&Fog&Elec)

In table 1, the reduction in NO_x for C2, when humid air system was used was in excess of 24%, the highest among all cases studies. At this power, the combustion temperature was high and the humid air was effective in reducing the temperature, resulting in substantial reduction in the NO_x emission. Injecting fog into the exhaust resulted in nearly 20% NO_x reduction, followed by C5 at nearly 17%, C4 at about 13%, and finally C6 at slightly higher than 12%.

C2 was the only case with substantial reduction in PM (at slightly higher than 34%), when the humid air system was used. All the other cases showed

increases in PM, even in the C3 experiment when fog was injected into the exhaust.

| | rpm | Torque (N.m) | mf (lb/hr) | BHP (hp) | BSFC (lb/hr-hp) | PM/BSFC | NO _x /BSFC | % APM/Exh | % ANO _x /Exh |
|------------------|------|--------------|------------|----------|-----------------|---------|-----------------------|-----------|-------------------------|
| Exh | 1754 | 20 | 3.31 | 8.77 | 0.38 | 113.20 | 259.07 | | |
| Exh&Hum | 1758 | 20 | 3.97 | 8.79 | 0.45 | 74.30 | 196.28 | -34.36 | -24.24 |
| Exh&Fog | 1765 | 20 | 3.31 | 8.83 | 0.37 | 116.17 | 207.54 | 2.62 | -19.89 |
| Exh&Hum&Fog | 1768 | 20 | 3.17 | 8.84 | 0.36 | 121.48 | 224.61 | 7.31 | -13.30 |
| Exh&Fog&Elec | 1767 | 20 | 3.17 | 8.84 | 0.36 | 123.25 | 215.37 | 8.88 | -16.87 |
| Exh&Hum&Fog&Elec | 1767 | 20 | 3.17 | 8.84 | 0.36 | 136.62 | 227.55 | 20.69 | -12.17 |

Table 1. % Change in Emissions with Direct PM Measurements

In table 2, except for C2, all cases showed increases in PM emission with the highest being for C6, followed by C4, C3, and C5 respectively. For C2, there was substantial reduction in PM emission at nearly 40% which also corresponds to the highest rate of NO_x reduction at slightly higher than 51%. All other cases also displayed NO_x reduction with C3 being the next highest followed by the C6, C4, and C5 respectively. These trends were similar with the previous results when PM was measured directly with a TSI unit.

| | rpm | Torque (N.m) | mf (lb/hr) | BHP (hp) | BSFC (lb/hr-hp) | PM/BSFC | NO _x /BSFC | % APM/Exh | % ANO _x /Exh |
|------------------|------|--------------|------------|----------|-----------------|---------|-----------------------|-----------|-------------------------|
| Exh | 1754 | 20 | 3.31 | 8.77 | 0.38 | 232.42 | 114.72 | | |
| Exh&Hum | 1758 | 20 | 3.97 | 8.79 | 0.45 | 139.76 | 55.78 | -39.87 | -51.38 |
| Exh&Fog | 1765 | 20 | 3.31 | 8.83 | 0.37 | 266.52 | 86.98 | 14.67 | -24.18 |
| Exh&Hum&Fog | 1768 | 20 | 3.17 | 8.84 | 0.36 | 270.28 | 95.04 | 16.29 | -17.15 |
| Exh&Fog&Elec | 1767 | 20 | 3.17 | 8.84 | 0.36 | 250.31 | 98.78 | 7.70 | -13.89 |
| Exh&Hum&Fog&Elec | 1767 | 20 | 3.17 | 8.84 | 0.36 | 302.18 | 94.31 | 30.01 | -17.79 |

Table 2. % Change in Emissions using Dilution Tunnel for PM Measurements

Benefits

Results of the present experiments have shown that the humid air system and exhaust fog scrubber with distilled water as the working fluid are viable options for reducing both NO_x and PM emissions in diesel engines.

Project Costs

The project was completed with funding from the SCAQMD in the amount of \$28,000 and in-kind cost-share contributions in the form of space and laboratory equipment and additional person-hours.

Commercialization and Applications

Further steps are required for development of a portable adaptive system that can be incorporated in the existing and new diesel trucks for reducing NO_x and PM emissions.

Demonstrate Medium-Speed Neighborhood Electric Vehicles

Contractor

South Bay Cities Council of Governments
(SBCCOG)

Cosponsor

SCAQMD

Project Officer

Lisa Mirisola

Background

Achieving federal and state clean air standards in Southern California will require emission reductions from both mobile and stationary sources beyond those expected using current technologies. Passenger cars and light trucks account for most of these emissions. In addition, there are increasing concerns over GHG emissions from these vehicles and petroleum dependence from the heavy use of conventional technologies. For many residents within the geographic boundaries of the SCAQMD, commutes and other daily trips can be accomplished solely on residential streets at speeds below 35 MPH.

Project Objective

This program was intended to promote neighborhood electric vehicles (NEVs) to residents, businesses and municipalities in the South Bay sub-region. The project objective was to answer these three questions:

1. Will South Bay residents drive NEVs to satisfy a portion of their travel needs without the infrastructure changes and driving culture that have provided support in the most successful NEV communities elsewhere?
2. Does the usage have the potential to produce significant environmental and economic benefits?
3. Is large scale deployment of NEVs (or LUVs) feasible?

Technology Description

A NEV is a zero emission vehicle that can be driven on public streets subject to being registered, having a Vehicle Identification Number (VIN), being insured and adhering to vehicle safety standards. In 1998, the National Highway Traffic Safety Administration (NHTSA) of the Federal Department of Transportation defined a street-legal Low Speed Vehicle (LSV) in the Code of Federal Regulations (Rule FMVSS 500). NEVs are recognized as a sub-class of LSVs, limited to a maximum speed of 25 MPH and restricted to streets with speed zones of 35 MPH or less. The “advancement” involved is learning how to stimulate a stalled market place for a technology that was originally commercialized about 20 years ago.



Figure 1: NEV Used in Study

Status

The active demonstration phase of the project was completed in December 2012. There were four main activities: 1) preparation (leasing vehicles, arranging insurance; acquiring and installing GPS, recruiting, and selecting and training participants); 2) active demonstration (51 households drove a NEV for 2 to 4 months each); 3) data processing and analysis (GPS generated a data point every minute each vehicle was “on” creating millions of geo-data points that were mapped, summarized in tables, and interpreted); and 4) reporting. Unanticipated problems included occasional

unreliability of the NEVs which led to a change in fleet composition about half way through the active demonstration; poorly maintained driver logs which required additional staff time to call drivers for interpretation; and more complex travel patterns and destinations which required more staff time to interpret and analyze.

Results

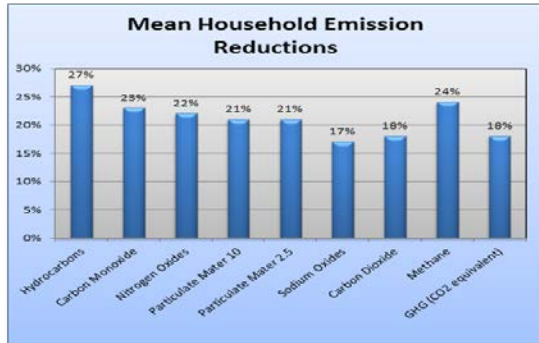


Figure 2: Mean Household Emission Reduction

The objectives did not involve any specific emissions reduction targets. Emissions reduction per household is one outcome the project sought to measure. However, the average household reductions in criteria pollutants and GHG emissions were surprisingly high compared to reasonable expectations.

Another of the objectives was to verify that drivers routinely used a NEV and accessed a wide range of destinations. NEV miles on average made up 19% of total household VMT. There were no performance tradeoffs. More NEV use resulted in greater reductions in criteria pollutants and GHG emissions reductions.

Benefits

The immediate benefits included giving a specialized, zero emission neighborhood vehicle a high level of public exposure, while producing environmental impacts that can help make the vehicle attractive to manufacturers and policy makers.

Potential benefits include the pollution reductions that are possible if all South Bay residents “right sized” their vehicles to suit their travel needs. That is assuming all trip segments less than 5 miles long, driven by South Bay residents in a zero emission neighborhood vehicle (approximately 1.7

billion of 43% of the VMT driven by South Bay residents) could be shifted from gasoline to EV propulsion technology. That is approximately 1 billion annual trip segments or 82% of all trip segments. That equates to a 59% reduction in private vehicle hydrocarbons, 52% reduction in carbon monoxide, 51% reduction nitrogen dioxide, 48% reduction in all particulate matter, 47% reduction in sodium oxides, and a 56% reduction in methane emissions. Overall, battery recycling will improve the net gains from widespread NEV use, although NEVs use relatively small onboard battery packs.

Project Costs

| | Actual Cost (Including in-kind by SBCCOG) | SCAQMD Project Budget |
|----------------------------|--|-----------------------------|
| Total | \$311,807.02 | \$298,640.00 |
| Labor | \$175,757.74 | \$158,805.00 |
| GPS | \$10,497.19 | \$10,435.89 |
| Insurance | \$10,491.39 | \$11,336.11 |
| Vehicle Acquisition | \$105,517.52 | \$118,063.00 |
| Vehicle Unplanned | \$6,527.79 | \$ - |
| Other Expenses | \$3,015.39 | \$ - |

Commercialization and Applications

The South Bay Cities Council of Governments is planning a presentation specifically for the auto manufacturing industry to share the data that essentially establishes the existence of a short range, slow speed vehicle market in mature, compact suburbs such as the South Bay cities. Lessons learned about product quality and price will also be presented.

There are about 275,000 “secondary” vehicles driven by South Bay residents. Replacing them with NEVs and other ZEVs is the market target. The primary barrier to reaching that target is the public education to guide residents and businesses toward the ability to “right size” their vehicle choices. Most residents currently use too much automotive technology to make the 1-, 2-, and 3-mile trips that make up the majority of their average travel behavior.

Demonstrate Quick Charge Infrastructure for Electric Buses

Contractor

Foothill Transit

Cosponsors

ARRA (via FTA)
SCAQMD

Project Officer

Joseph Impullitti

Background

Transit buses are ideal applications for advanced, alternative energy technologies that address criteria pollutant and greenhouse gas emissions because they operate in highly visible, congested areas where air quality is a problem. Electric zero emission transit buses address these problems. Traditionally, the range and charging needs of batteries have been barriers to employ battery-powered buses in large scale applications. Additionally, the weight of traditional buses has made it difficult to feasibly incorporate a battery with sufficient power and energy storage capacity into coach designs. By using a smaller battery that can be charged quickly and repeatedly, the bus weight and cost can be reduced. The keys to quick charge electric bus technology are the utilization of a quick charge battery and quick charge infrastructure. The battery must be able to retain its energy reserve and charging profile over many charge-discharge cycles and be quick charged in ten minutes or less. The quick charge infrastructure must be able to deliver a large amount of energy in a short period of time and operate safely without human intervention because of the high voltage and associated heavy cables.

Project Objective

The objective of this demonstration is to determine the feasibility of quick charge electric buses and associated infrastructure in an established urban route. Foothill Transit replaced three diesel buses with Ecoliner electric buses with

quick charge capability and quick charge infrastructure on an existing route from the City of La Verne to the City of Pomona.

Technology Description

Each 35-foot Proterra Ecoliner quick-charge electric bus can carry 37 passengers and were built with the following features:

- Composite body: lighter weight, longer life, less cost to maintain
- Battery (74 kWh): <10 minute recharge time, safe chemistry, tested >10,000 cycles
- Drive System: improved fuel economy, reduced noise, low maintenance, lower operating costs

The charging infrastructure was designed and built by AeroVironment with the following features:

- 500KW charger can rapid charge the battery from 10% to 95% in 10 minutes or less
- Unique architecture allows for lower cost and lower impact grid connections while maintaining high charge rates
- Safe overhead charge connection, no operator contact with charger

Status

The three buses are currently operating in revenue service on Foothill's 291 lines from La Verne to Pomona.



Figure 1: Ecoliner Bus Being Charged at Foothill Transit's Pomona Station

Results

All three Ecoliner buses are running in daily revenue service on line 291 from La Verne to Pomona. The three buses have accumulated nearly 175,000 in-service miles and Proterra data collection indicates overall energy efficiency is as good as or better than initially expected. The following characterizes the performance results of the demonstration:

- Total battery charge/discharge cycles: 22,406
- Battery capacity loss over 3 years: <2%
- Maintenance and Repair issues:
 - No propulsion or charging issues
 - Borg Warner transmission issue, replaced with Eaton transmission
 - Non power-train issues with fit & finish, doors and wheel chair lift
- Maintenance Cost Savings Over Diesel: Approximately \$40K/year for 3 buses
- Fuel Economy Vs. Diesel:
 - Altoona test results: 17.5 to 29.2 mpg diesel equivalent
 - Fuel Economy: 1.5 – 2.0 kWh/mile
 - 40 foot diesel bus averages 3.8 mpg
 - Cost for 120 mile daily usage:
 - Ecoliner - \$36 (\$0.15/kWh)
 - Diesel - \$126 (\$4.00/gal)

Benefits

Foothill Transit believes that quick charge battery electric vehicles will be a solution that will create a paradigm shift for transit fleets because:

- Ability to use battery-electric vehicles as a one-to-one replacement of a conventionally driven vehicle
- Lower energy requirements – smaller battery means lower cost lower weight, improved efficiency, and the battery can accept a high rate of charge so regeneration from braking is increased.

According to CARB, a reduction of 0.47 tons of criteria pollutants and 77.3 tons of GHG's per bus per year is realized. If Foothill Transit were to meet the ZBUS regulation with 15% of their fleet converted to electric, the benefits would be 22.4 tons of criteria pollutants and 3,600 tons of GHG emission reductions.

Project Costs

| SOURCE | CONTRIBUTION | PERCENT |
|-----------------------|--------------|---------|
| ARRA (via FTA) | \$4,770,000 | 94% |
| SCAQMD | \$290,000 | 6% |
| TOTAL | \$5,060,000 | 100% |

Commercialization and Applications

Foothill Transit became the first transit agency in the U.S. to use on-route charge electric buses. The Proterra buses are 72% plus Buy America content and qualify for FTA funding. The agency is purchasing an additional 12 buses from Proterra to completely electrify its 291 route between La Verne and Pomona. Cost per bus is \$990K which is a 25% reduction compared to the first three buses that cost \$1.2M per bus. The new buses will have improvements to Fit & Finish, new doors, new seating layout and the same power-train and batteries which have performed well for Foothill. Nine of the twelve buses will be assigned to the 291 Route and 3 buses will be assigned to other routes in Foothill Transit's territory.

Upgrade & Install Electric Charging Infrastructure

Contractor

ECotality

Cosponsor

SCAQMD

Project Officer

Patricia Kwon

Background

There are approximately 1,800 PEV chargers in need of upgrading in the South Coast Air Basin. These sites are ideal locations to upgrade electrical vehicle service equipment (EVSE) for Level 2 charging at a lower cost than to install EVSE at new site locations. Leveraging the DOE and/or CEC funding, SCAQMD executed a contract with ECotality to install new or upgraded Level 2 EVSE at high usage site locations identified by SCAQMD and ECotality. ECotality received DOE and CEC funding to pay for hardware and partial installation costs for Level 2 EVSE at 70 site locations. SCAQMD is providing cofunding of \$1,000 per charger to offset installation costs at these locations. Data will be collected from these chargers and provided to SCAQMD to assist in SCAQMD's PEV infrastructure planning process for the DOE and CEC PEV infrastructure grants for the South Coast region.

Project Objective

SCAQMD executed a contract with ECotality to leverage DOE and CEC support for installation of Level 2 EVSE as part of The EV Project, a national project for installation of EVSE in key markets. ECotality upgraded existing EVSE which were obsolete and installed new EVSE. ECotality submitted a list of approved sites. As part of the SCAQMD program, ECotality dedicated full time resources to identify potential site hosts eligible for replacement of obsolete units.

ECotality completed installation 47 of the planned 70 EVSE. Some costs are in excess of \$1,000,

with those costs were supplemented by The EV Project funding and/or the site hosts. Using the approved site list for sites with obsolete equipment proved challenging. For a three month period, ECotality had a full-time staff person contact site hosts and owners of obsolete EVSE to assess replacement opportunities. With little progress, ECotality assigned additional staff and regional management to make contact to a larger approved list. From January 2011 to March 2012, these employees were largely unable to secure approval for replacement of obsolete EVSEs. Some significant challenges encountered were:

- Site hosts did not understand or recognize that the site had EVSE
- Site hosts felt the new EVSE was another passing fad
- Site hosts felt obsolete equipment was not used and new EVSE would be under utilized
- Site hosts felt the EVSEs offered little benefit to their business
- Site hosts did not believe enough PEVs existed to support the replacement of EVSE
- Site hosts did not want to enter into business agreements

After attempting to improve contact and replacement of obsolete EVSE through the use of experienced skilled sales and support staff, ECotality approached SCAQMD to request approval of funds to contribute to new sites. By agreement, ECotality followed the same procedures for submission to SCAQMD and provided site locations for approval or denial. These new installations accounted for 68% of the replacements and contributed to additional EVSE installations. Some prominent locations included LA Live Staples Center, Loyola Marymount University, University of Southern California, and Fox Studios. Other sites who received SCAQMD funding included local small businesses, hotels, marketplaces, and commercial developments. All sites are publicly accessible during business hours. For instance, Staples Center EVSEs may only be available during official events.

Technology Description

Level 2 EVSE with J1772 connectors were installed. The largest challenge for construction of ground-mount EVSE units included the style of EVSE. Because the Blink EVSE utilizes a concrete base; post-mounted EVSE and foundations were not compatible with the Blink unit. This typically required additional construction to facilitate the installation of the new EVSE. As a requirement for new construction and electrical work, permits were required and obtained for projects. There were no significant issues presented with permitting of replacement units.

Status

ECotality declared bankruptcy in late 2013 and was unable to complete all 70 Level 2 EVSE installations. CarCharging Group assumed control of ECotality's assets in late 2013 and is the process of communicating with site hosts in The EV Project to determine their future status starting in 2014. The EV Project has been recently extended by DOE to April 2014.



Figure 1: Blink EVSE

Results

ECotality's Level 2 EVSE installations are shown in the following map:

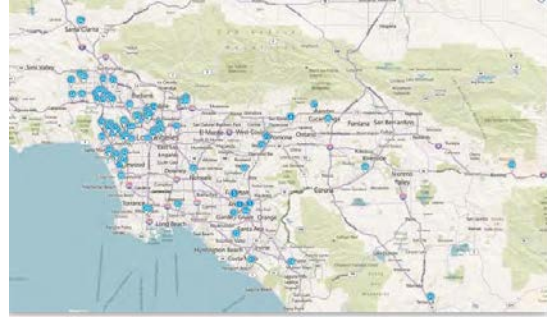


Figure 2: Ecotality's Level 2 EVSE Installations

Source:

<http://prod.blinknetwork.com/blinkMap.html>

Benefits

This project will assist in advancing PEV readiness in California by creating additional public access charging that is convenient and affordable for PEV drivers.

Project Costs

EV infrastructure hardware and installation costs were through DOE and CEC funding from The EV Project, and remaining installation costs were cost shared between The EV Project and the site owner. SCAQMD funding provided \$1,000 per EVSE towards installation costs for a total of \$70,000.

Commercialization and Applications

Level 2 EVSE is currently commercially available, with installations worldwide. The EV Project installed about 370 Level 2 EVSE in the greater Los Angeles region, with SCAQMD funding contributing towards 70 of those installations.

Demonstrate Advanced Fuel Cell Bus (American Fuel Cell Bus)

Contractor

SunLine Transit Agency

Cosponsors

Dept. of Transportation/FTA
CARB
SCAQMD

Project Officer

Joseph Impullitti

Background

FTA's National Fuel Cell Bus Program (NFCBP) includes an international network of technology developers, suppliers and experts in the area of zero emission buses and enabling technology. Periodic reviews and reports on the status of the NFCBP will provide the SCAQMD with available data that may reflect on the commercial readiness of ZBuses and enabling technology.

Project Objective

The intent of this project is the development of a new design fuel cell bus with a North American chassis as well as domestically sourced fuel cell and drive components. Success in this program will ensure availability of a U.S. built product that can offer transit properties the opportunity to buy buses through the FTA capital program. Specifically, the program commercial focus anticipates that the resulting fuel cell bus product would be built and sold profitably at a price of under \$2 million. Also, there is an expectation that extended warranties for the fuel cell and battery pack can be attained, further driving down the warranty costs through significantly longer operating lives than the 2005 generation fuel cells and batteries. Body / chassis weight and noise reductions will maximize the number of passengers each fuel cell bus can accommodate while also maximizing the passengers' level of comfort. Packaging the latest generation fuel cell-hybrid drive system into a physically attractive bus

with contemporary styling, and which features sufficient U.S. derived content to meet FTA "Buy-America" provisions is very important. Finally, the vehicle will include new power electronics, advanced energy storage and a unique hi-efficiency accessory electronics package.

Technology Description

BAE Systems based the American Fuel Cell Bus (AFCB) propulsion system on its commercial hybrid electric transit bus product, which is operating in buses around the world. For the AFCB, the system was modified to provide power with the Ballard fuel cell system in place of a diesel engine/generator. Ballard's 150 kW fuel cell incorporates the latest advances for durability and efficiency based on numerous field demonstrations of Ballard fuel cell powered buses. The AFCB also incorporates a suite of electric accessories powered by BAE Systems' Accessory Power System.

Status

In accordance with the project plan, the vehicle entered revenue service on December 7, 2011 and completed the one year demonstration phase on December 6, 2012. The bus is continuing in daily revenue service and data provided in this report will be through the end of December 2012. Over the one-year demonstration period, the bus amassed over 36,000 miles and nearly 40,000 miles by the end of December 2012.



Figure 1: AFCB

Results and Benefits

During the evaluation period, the AFCB has achieved exceptional availability, averaging 85 percent. The issues causing downtime were most often related to general bus system items rather than the advanced technologies that were the focus of the demonstration. These issues were generally of a "low tech" nature and consistent with the type of issues that would be expected when introducing a new configuration in a prototype bus model. Overall, the AFCB averaged 6.54 miles per kilogram of hydrogen, which equates to 7.39 miles per diesel gallon equivalent (DGE). Using the gasoline gallon equivalent (GGE) fuel economy of the CNG buses as a baseline, the AFCB had a fuel economy 2.4 times higher than that of the CNG buses.

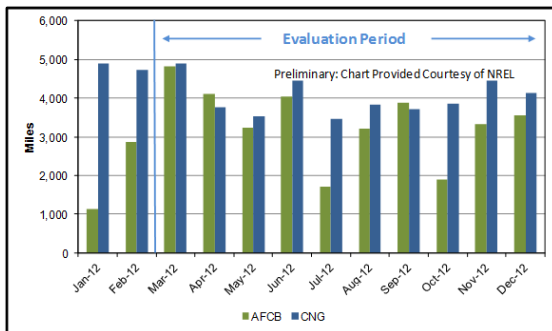


Chart 1: Fuel Cell Bus Miles compared to CNG Reference Fleet

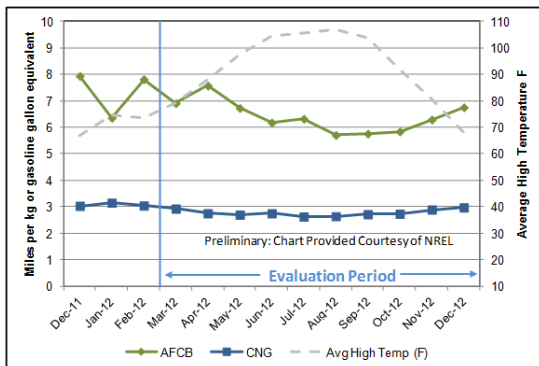


Chart 2: Fuel Economy Summary

Each of the project team members report that the demonstration has gone well and all are pleased with the performance of the AFCB. BAE Systems reports that the performance of the bus matched or exceeded their expectations. SunLine notes that the bus procurement and development process went well and the AFCB start-up issues were much fewer than with previous fuel cell electric buses.

Project Costs

The total project cost was \$10,214,877, as follows:

- FTA/CalStart (\$4,197,955)
- CARB (\$800,000)
- SCAQMD (\$400,000)
- BAE (\$4,152,450) - in-kind
- SunLine/EIDorado (\$664,438) - in-kind

Commercialization and Applications

For fuel cell electric buses to be fully commercialized, the fuel cell hybrid propulsion system needs to be an option offered by the bus OEM in response to increased market demand, as is the case with current diesel hybrid systems. Hybrid buses are currently offered by most OEMs, which order and install the propulsion system at the bus manufacturing plant. BAE Systems' role is as supplier and integrator of propulsion and electric power systems that enable the capability offered by the OEM. In the case of the AFCB project, the integrator and transit agency have taken the lead role in developing the bus. This role needs to transition to the bus OEM for the technology to be fully adopted.

SCAQMD Contract #10714

December 2013

Develop Fuel Cell Gas-Turbine Hybrid System for On-Board Locomotive Applications

Contractor

University of California, Irvine

Cosponsors

CARB
SCAQMD

Project Officer

Dipankar Sarkar

Background

Transportation of freight via rail is ubiquitous within the logistics system of both California and the United States. While the system provides a necessary service and has a major positive effect on the economy, its benefits are coupled to serious environmental and health concerns due to the combustion of diesel fuel in conventional locomotives. The burden of these negative effects is disproportionately placed on those who live closest to operational centers for the locomotives. Thus, there exists a need to develop a power system for the locomotives (and in the long-term, other diesel-burning vehicles) that avoids a major portion of the emission of deleterious CO₂, NO_x, and diesel particulate matter. While major development has been underway to develop reciprocating engines or post-combustion technologies to address the issue, it may be an advantage to utilize a fundamentally more efficient and cleaner prime mover technology. The Solid Oxide Fuel Cell-Gas Turbine (SOFC-GT) is proposed as a candidate for this purpose. The SOFC-GT, though still in the early stages of development, has proven to have high-efficiency operation with exceedingly low emissions of CO₂ and NO_x. This work evaluates the system's capability to satisfy the requirements of the locomotive application and the rail industry's expectations.

Project Objectives

The objectives of the project are to (1) develop and implement a proof-of-concept system analysis for a SOFC-GT hybrid power block for long-haul

locomotive applications, and (2) establish a conceptual design for a real world demonstration.

Technology Description

In this work, the system is based on the recuperated Brayton cycle, with the SOFC and turbine in the topping cycle configuration. Just as in the recuperated Brayton cycle, the heat exchanger in this work's baseline serves to preheat the air prior to entry to fuel cell, with the intent of supporting a high fuel cell operating temperature so that high power densities can be maintained and losses are at a minimum. In addition, it is assumed that the outlet temperature of the fuel cell will not be high enough to support the turbine inlet temperature requirements. Moreover, control of the turbine's operating temperature is necessary for overall system control. Thus, the system also includes a combustor between the fuel cell and turbine to meet both these needs. The system has a single turbine.

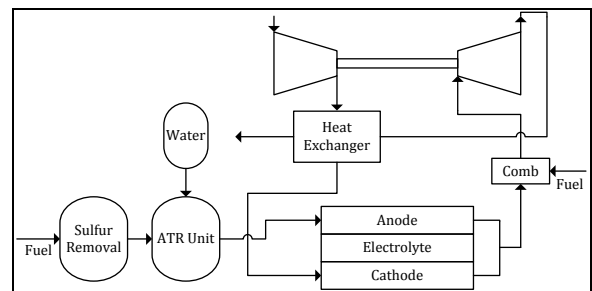


Figure 1: SOFC-GT Baseline System Layout

Status

This project has been completed including the submission of a final report. The project has resulted in the successful development and execution of the simulation model for the SOFC-GT locomotive. The analysis, executed to assess performance when operating on hydrogen, liquefied natural gas and diesel fuels along a representative route through the Cajon Pass, demonstrates the viability of the technology and establishes a conceptual design for a real world demonstration.

Results

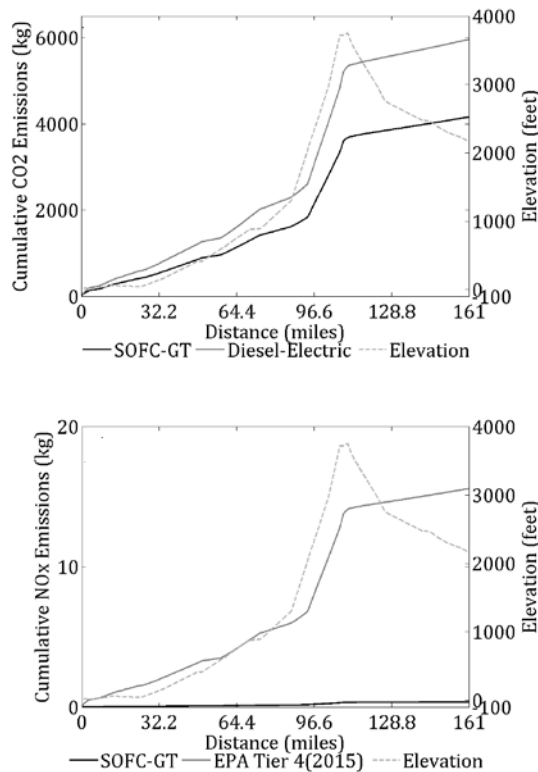


Figure 2: Emissions Comparison between SOFC-GT and Diesel-Electric Systems

Along a typical operating route, an SOFC-GT locomotive fueled by diesel fuel can experience average system efficiency of 52.2%, thereby saving 30.3% of CO₂, and 97.7% of NO_x emissions; a natural gas-fueled system offers average system efficiency of 60%, CO₂ savings of 53.8%, and NO_x savings of 97.7%. For these systems, the integration of the reformer onboard provided an increase in efficiency over the option of offboard reformation; a 7-point gain was observed for diesel and a 12-point gain observed for natural gas. In terms of durability, it was observed that constant rated-power operation could induce a degradation rate of 0.75% per hour, much too high for commercial viability as full deactivation of the SOFC would occur in only 300 hours. However, degradation over a typical route was small enough to be reversible. Furthermore, with a carbon mitigation strategy such as an anode barrier layer applied to only half of the cell, degradation rates could be as low as 0.02% to 0.05% per hour, approaching viability if regenerative cycles are considered a regular part of system maintenance.

It was concluded that the SOFC-GT system is capable of replacing the conventional diesel engine. Adoption of a system operating on diesel would be relatively difficult due to limitations of durability and space available onboard for storing of the water required for reformation. In addition, the degradation issue may be avoided with as little as 100 anode oxidation regenerative cycles over a prime mover lifetime of 100,000 hours of operation. Reformates generated off-board, natural gas reformed onboard and humidified hydrogen were established as viable fuel options, all of which provided even greater efficiency and emissions benefits than the diesel case. The natural gas-fueled system with the fuel reformed onboard proved to be the most efficient option. The hydrogen case would provide for zero emission operation at the locomotive but life-cycle emission dependent on the hydrogen source.

Benefits

The SOFC-GT system has the potential to all but eliminate locomotive NO_x emissions, reduce CO₂ emissions between 30% and 60% based on fuel choice, correspondingly increase fuel efficiency and thereby substantially reduce operating costs, and reduce local noise levels and deleterious air quality impacts in areas of high rail activity.

Project Costs

The cost of the project was \$156,000, co-funded by CARB at \$78,000 and the SCAQMD at \$78,000. The project was completed within budget.

Commercialization and Applications

It was determined that the space (footprint and volume) allocated today for the diesel engine on conventional locomotives is sufficient, and the dynamic response for the proposed SOFC-GT system is satisfactory. The next step is to design and conduct a demonstration of the SOFC-GT power block on an experimental rail platform. The advent of domestically sourced natural gas and the growing interest of railroad companies to transition from diesel to natural gas suggest an implementation strategy with natural gas, circumventing altogether the exploration of fueling the SOFC-GT power block with diesel.

SCAQMD Contract #13113

January 2013

Participate in California Fuel Cell Partnership for CY 2012 & Provide Support for Regional Coordinator

Contractor

Bevilacqua-Knight Inc

Cosponsors

8 automakers; 2 energy providers; 6 government agencies; 1 technology provider; and 17 associate members

Project Officer

Lisa Mirisola

Background

Established with eight members in 1999, the California Fuel Cell Partnership (CaFCP) is a collaboration in which private and public entities are independent participants. It is not a joint venture, legal partnership or unincorporated association. Therefore, each participant contracts with Bevilacqua-Knight, Inc. for their portion of CaFCP administration. SCAQMD joined the CaFCP in April 2000, and the CaFCP currently includes 34 organizations interested in demonstrating fuel cell vehicle and fueling infrastructure technology.

Project Objective

There were several goals for 2012:

- Establish and maintain a common vision for the market transition of FCVs in California;
- Facilitate the deployment of commercial fueling stations and coordinate with OEM vehicle plans;
- Support practical codes and standards development;
- Prepare communities for vehicles and fueling stations, and train first responders;
- Coordinate with other fuel cell vehicle demonstration programs worldwide; and
- Enhance public awareness and understanding through technology demonstrations and outreach.

Status

The members of the CaFCP intend to continue their cooperative demonstration efforts and have set goals through 2012, subject to a budget approved annually. This final report covers the SCAQMD Contract #11656 for 2012 membership. This contract was completed on schedule.



Figure 1: Fuel Cell Vehicles on Display at Local Event

Technology Description

The CaFCP members together or individually are demonstrating fuel cell passenger cars and transit buses and associated fueling infrastructure in California. The passenger cars include Daimler's B Class F-CELL, GM's Chevy Fuel Cell Vehicle, Honda's FCX Clarity, Hyundai's Tucson, Nissan's XTrail, and Toyota's FCHV-adv. The fuel cell transit buses include 12 placed at AC Transit (Van Hool buses with UTC fuel cells) and 3 placed at Sunline Transit (1 UTC/ISE, and 1 Ballard/New Flyer, and 1 Ballard/BAE). Proterra has also placed a battery dominant FC hybrid bus at the City of Burbank and Hydrogenics/BAE has placed one bus with SF MTA.

Results

Specific accomplishments include:

- Automotive members placed over 400 fuel cell passenger vehicles on California roads from 1999 through 2012, including the first retail customers starting in 2005;

- Transit agency members have demonstrated 20 fuel cell buses since 1999, with 15 currently in operation (see technology description);
- There are eight public hydrogen fueling stations in operation in California. There are also 15 additional private stations clustered in regional networks in northern and southern California;
- CaFCP staff and members continue to train local fire departments and work with emergency response organizations to coordinate with state and national efforts;
- CaFCP organized or participated in several ride & drive events, notably Santa Monica AltCar Expo.
- CaFCP continued to upgrade its comprehensive up-to-date website focusing on efforts in California, participated in technical and educational conferences, and helped prepare for hydrogen station openings.

Benefits

Compared to conventional vehicles, fuel cell vehicles can offer zero or near-zero smog-forming emissions, reduced water pollution from oil leaks, higher efficiency and much quieter and smoother operation. If alternative or renewable fuels are used as a source for hydrogen, fuel cell vehicles will also encourage greater energy diversity and lower greenhouse gas emissions (CO₂).

By combining efforts, the CaFCP can accelerate and improve the commercialization process. The members have a shared vision about the potential of fuel cells as a practical solution to California's environmental issues and similar issues around the world. The CaFCP provides a unique forum where technical and interface challenges can be identified early, discussed, and potentially resolved through cooperative efforts.

Project Costs

Auto members provide vehicles, the staff and facilities to support them. Energy members engage in fueling infrastructure activities. The CaFCP's annual operating budget is about \$2 million, and includes facility operating costs, program administration, joint studies and public outreach and education. Each member makes an annual contribution of approximately \$88,000 towards the common budget. Some government agencies contribute additional in-kind products and services. SCAQMD provides an additional \$50,000 annually

to support a Southern California Regional Coordinator and provides office space for additional staff in-kind at SCAQMD.

Commercialization and Applications

While research by multiple entities will be needed to reduce the cost of fuel cells and improve fuel storage and infrastructure, the CaFCP can play a vital role in demonstrating fuel cell vehicle reliability and durability, fueling infrastructure and storage options and increasing public knowledge and acceptance of the vehicles and fueling.

From 2010 to 2012, CaFCP's goals relate to Building Market Foundations through coordinated individual and collective effort. In 2013, CaFCP will start its fourth phase with activities to launch the commercial market. During this phase, CaFCP members, individually or in groups, will focus on important goals.

- Prepare for larger-scale manufacturing, which encompasses cost reduction, supply chain and production.
- Work on the customer channel, including identifying and training dealers and service technicians.
- Reduce costs of station equipment, increase supply of renewable hydrogen at lower cost, and develop new retail station approaches.
- Support cost reduction through incentives and targeted RD&D projects
- Continue research, development and demonstration of advanced concepts in renewable and other low-carbon hydrogen.
- Provide education and outreach to the public and community stakeholders on the role of FCEVs and hydrogen in the evolution to electric drive.

Participate in California Fuel Cell Partnership for CY 2013 & Provide Support for Regional Coordinator

Contractor

Bevilacqua-Knight Inc

Cosponsors

8 automakers; 6 government agencies; 1 technology provider; and 19 associate members

Project Officer

Lisa Mirisola

Background

Established with eight members in 1999, the California Fuel Cell Partnership (CaFCP) is a collaboration in which private and public entities are independent participants. It is not a joint venture, legal partnership or unincorporated association. Therefore, each participant contracts with Bevilacqua-Knight, Inc. for their portion of CaFCP administration. SCAQMD joined the CaFCP in April 2000, and the CaFCP currently includes 34 organizations interested in demonstrating fuel cell vehicle and fueling infrastructure technology.

Project Objective

There were several goals for 2013:

- Establish and maintain a common vision for the market transition of FCVs in California;
- Facilitate the deployment of commercial fueling stations and coordinate with OEM vehicle plans;
- Support practical codes and standards development;
- Prepare communities for vehicles and fueling stations, and train first responders;
- Coordinate with other fuel cell vehicle demonstration programs worldwide; and
- Enhance public awareness and understanding through technology demonstrations and outreach.

Status

The members of the CaFCP intend to continue their cooperative demonstration efforts and have set goals through 2016, subject to a budget approved annually. This final report covers the SCAQMD Contract #14054 for 2013 membership. This contract was completed on schedule.



Figure 1: DOE Solar Decathlon, Irvine CA

Technology Description

The CaFCP members together or individually are demonstrating fuel cell passenger cars and transit buses and associated fueling infrastructure in California. The passenger cars include Daimler's B Class F-CELL, GM's Chevy Fuel Cell Vehicle, Honda's FCX Clarity, Hyundai's Tucson, Nissan's XTrail, and Toyota's FCHV-*adv*. The fuel cell transit buses include 12 placed at AC Transit (Van Hool buses with UTC fuel cells) and 3 placed at Sunline Transit (1 UTC/ISE, and 1 Ballard/New Flyer, and 1 Ballard/BAE).

Results

Specific accomplishments include:

- Automotive members placed over 500 fuel cell passenger vehicles on California roads from 1999 through 2013, including the first retail customers starting in 2005;
- Transit agency members have demonstrated 24 fuel cell buses since 1999, with 15 currently in operation (see technology description);
- There are ten public hydrogen fueling stations in operation in California. There

are also 15 additional private stations clustered in regional networks in northern and southern California;

- CaFCP staff and members continue to train local fire departments and work with emergency response organizations to coordinate with state and national efforts;
- CaFCP organized or participated in several ride & drive events, notably Santa Monica AltCar Expo.
- CaFCP continued to upgrade its comprehensive up-to-date website focusing on efforts in California, participated in technical and educational conferences and helped prepare for hydrogen station openings.

Benefits

Compared to conventional vehicles, fuel cell vehicles can offer zero or near-zero smog-forming emissions, reduced water pollution from oil leaks, higher efficiency and much quieter and smoother operation. If alternative or renewable fuels are used as a source for hydrogen, fuel cell vehicles will also encourage greater energy diversity and lower greenhouse gas emissions (CO₂).

By combining efforts, the CaFCP can accelerate and improve the commercialization process. The members have a shared vision about the potential of fuel cells as a practical solution to California's environmental issues and similar issues around the world. The CaFCP provides a unique forum where technical and interface challenges can be identified early, discussed, and potentially resolved through cooperative efforts.

Project Costs

Auto members provide vehicles, the staff and facilities to support them. Energy members engage in fueling infrastructure activities. The CaFCP's annual operating budget is about \$2 million, and includes facility operating costs, program administration, joint studies and public outreach and education. Each member makes an annual contribution of approximately \$88,000 towards the common budget. Some government agencies contribute additional in-kind products and services. SCAQMD provides an additional \$50,000 annually to support a Southern California Regional Coordinator and provides office space for additional staff in-kind at SCAQMD.

Commercialization and Applications

While research by multiple entities will be needed to reduce the cost of fuel cells and improve fuel storage and infrastructure, the CaFCP can play a vital role in demonstrating fuel cell vehicle reliability and durability, fueling infrastructure and storage options and increasing public knowledge and acceptance of the vehicles and fueling.

From 2013 to 2016, CaFCP's goals relate to Preparing for Market Launch through coordinated individual and collective effort. During this fourth phase, CaFCP members, individually or in groups, will focus on important goals.

- Prepare for larger-scale manufacturing, which encompasses cost reduction, supply chain and production.
- Work on the customer channel, including identifying and training dealers and service technicians.
- Reduce costs of station equipment, increase supply of renewable hydrogen at lower cost, and develop new retail station approaches.
- Support cost reduction through incentives and targeted RD&D projects
- Continue research, development and demonstration of advanced concepts in renewable and other low-carbon hydrogen.
- Provide education and outreach to the public and community stakeholders on the role of FCEVs and hydrogen in the evolution to electric drive.

Develop, Initiate and Implement Clean Vehicle Outreach Project

Contractor

Three Squares, Inc. (TSI)

Cosponsor

SCAQMD

Project Officer

Lisa Mirisola

Lourdes Cordova Martinez

Background

The SCAQMD has long supported plug-in electric vehicles, ranging from light-duty battery electric vehicles to heavy-duty plug-in hybrid electric vehicles, due to the clean air benefits associated with electrifying the transportation sector. With the commercialization this year of plug-in vehicles (PEVs) by Nissan, GM and Ford, the SCAQMD Board expressed concerns that only the early-adopters and PEV advocates would know the true value associated with these technologies; whereas the general public is insufficiently educated and often times misinformed about the costs and benefits of such vehicles.

Project Objective

TSI was contracted to coordinate an outreach campaign designed to retool existing SCAQMD programs to include and expand the current efforts to focus some or all of the messaging aspects, where appropriate, in the near-term on clean and high efficiency vehicles. These efforts will be included under a newly badged Clean Air Choices (CAC) program, which will provide an umbrella platform to promote all of the SCAQMD clean air technology activities in the future, such as low-VOC paints and solvents, electric lawn and garden equipment, air filters, low NO_x boiler and aftertreatment technologies, as well as clean vehicles.

Analyzing the list of current clean vehicle outreach events in the South Coast Air Basin, the project team selected several events to conduct in person outreach and live demonstrations of the

Clean Vehicle Calculator. TSI also coordinated displays with iPads and custom branded handouts featuring the Clean Air Choices Program Logo.

Technology Description

After several meetings with SCAQMD staff discussing the vision for the calculator, defining the audience (consumers in the South Coast Air Basin) and working through the technical specifications so that the calculator would function across digital platforms (desktop, iPhone, iPad, Droid, BlackBerry), TSI developed the “Clean Vehicle Calculator” and launched the site <http://www.cleancarchoices.org>.

In order to facilitate ease of use and updating of the calculator data (new vehicle models, smog scores, MSRP, and dealer assignments), TSI developed a Content Management System (CMS) to allow SCAQMD staff to make updates directly via a web-based portal. SCAQMD staff was briefed and trained on using the CMS.

| Year | Make | Model | MSRP | Smog Score | Dealer | | | | | |
|------|------|---------------------|----------|------------|--------|----|----|----|-----|------------|
| 2012 | Audi | A3 | \$24,148 | 2 | 0 | 19 | 28 | 23 | 7.8 | Write Note |
| 2013 | Audi | A3 | \$24,148 | 3 | 0 | 19 | 28 | 23 | 6.1 | Write Note |
| 2011 | BMW | 128i | \$34,328 | 4 | 0 | 18 | 28 | 22 | 8.5 | Write Note |
| 2012 | BMW | 128i | \$32,086 | 12 | 0 | 18 | 28 | 22 | 8.5 | Write Note |
| 2012 | BMW | 128i ConnectedDrive | \$34,379 | 3 | 0 | 19 | 28 | 23 | 8.5 | Write Note |
| 2012 | BMW | 128i ConnectedDrive | \$37,793 | 12 | 0 | 18 | 28 | 22 | 8.5 | Write Note |
| 2011 | BMW | 200i | \$34,628 | 3 | 0 | 18 | 28 | 22 | 8.5 | Write Note |

Figure 1: Image of Calculator CMS Interface

Status

The Clean Vehicle Calculator is available online at <http://www.cleancarchoices.org> and is also available via a click through link on the Clean Air Choices program web site located at <http://www.cleanairchoices.org>. The CMS is fully functional via a web-based portal and SCAQMD staff have user logins and passwords.

TSI conducted outreach activities at the following events located in the South Coast Air Basin:

- September 20, 2012
Senior Clean Air Fair - Los Angeles, CA
September 20, 2013
AltCar Expo – Santa Monica, CA
- September 28, 2013
Plug-In Day at the SCAQMD – Diamond Bar, CA



Figure 2: Clean Vehicle Calculator iPad demonstration at AltCar Expo

Results

The CMS was launched prior to the AltCar Expo which allowed updating of the calculator to include the new 2013 clean vehicle models. SCAQMD staff has been trained and will be able to enter the new 2014 clean vehicle models as soon as the vehicle list is available.

TSI staff interacted with attendees both as they visited the SCAQMD booth and while roaming around the event venues. Because of the portability of the handheld iPad, outreach staff was able to interact with attendees waiting in line for the ride and drive and demonstrate the Clean Vehicle Calculator. In addition, TSI staff visited with other exhibitors to inform them about the free online calculator and walk them through a live demonstration.

Benefits

The Clean Vehicle Calculator allows interested car shoppers to view easy, quick comparisons of environmental and economic benefits of selecting a clean vehicle, connect directly with a

local dealer and phone the dealer to schedule a test drive.

Project Costs

The following costs were associated with the tasks outlined in the scope of work:

Task 1 – Customized Content Management System = \$9,500

Task 2 – Clean Air Choices Outreach = \$12,000

The total contract award was \$21,500; however, the final budget was \$16,901.

Commercialization and Applications

The rebranded Clean Air Choices Program web site will become a venue to feature a variety of programs focused on promoting clean vehicles and clean home choices to residents in the South Coast Air Basin.

The Clean Vehicle Calculator will continue to be updated with new vehicle models as they are added to the SCAQMD Clean Vehicle Lists and featured at local dealerships. The Content Management System will allow SCAQMD staff easy access to make updates via a web interface and the ability to add vehicles, dealerships and edit vehicle data like smog scores.

Appendix D

List of Acronyms

LIST OF ACRONYMS

| | |
|---|--|
| AFRC—air/fuel ratio control | HCCI—Homogeneous Charge Combustion Ignition |
| APCD—Air Pollution Control District | HCNG—hydrogen-compressed natural gas (blend) |
| AQMD—Air Quality Management District | HDDT—highway dynamometer driving schedule |
| AQMP—Air Quality Management Plan | HDV—heavy-duty vehicle |
| ARB—Air Resources Board | HEV—Hybrid electric vehicle |
| ARRA—American Recovery & Reinvestment Act | HPDI—High Pressure Diesel Injection |
| BACT—Best Available Control Technology | HT—high throughput |
| BSNO _x —brake specific NO _x | HTPH—high throughput pretreatment and enzymatic hydrolysis |
| CAAP—Clean Air Action Plan | ICE—internal combustion engine |
| CAFR—Comprehensive Annual Financial Report | ICEV—internal combustion engine vehicle |
| CARB—California Air Resources Board | ICTC—Interstate Clean Transportation Corridor |
| CCF—California Clean Fuels | LCFS—Low-Carbon Fuel Standard |
| CEC—California Energy Commission | Li—lithium ion |
| CE-CERT—College of Engineering – Center for Environmental Research and Technology | LIMS—Laboratory Information Management System |
| CEMS—continuous emission monitoring system | LNG—liquefied natural gas |
| CFD—computational fluid dynamic | LPG—liquefied petroleum gas or propane |
| CNG—compressed natural gas | LSV—low-speed vehicle |
| CO ₂ —carbon dioxide | MATES—Multiple Air Toxics Exposure Study |
| CO—carbon monoxide | MECA—Manufacturers of Emission Controls Association |
| CRT—continuously regenerating technology | MPFI—Multi-Port Fuel Injection |
| DC—direct connection | MPG—miles per gallon |
| CY—calendar year | MSRC—Mobile Source Air Pollution Reduction Review Committee |
| DCM—dichloromethane | MSW—municipal solid wastes |
| DDC—Detroit Diesel Corporation | MY—model year |
| DEG—diesel equivalent gallons | MTA—Metropolitan Transportation Authority (Los Angeles County “Metro”) |
| DGE—diesel gallon equivalents | NAFA—National Association of Fleet Administrators |
| DF—deterioration factor | NCP—nonconformance penalty |
| DMS—Division of Measurement Standards | NEV—neighborhood electric vehicles |
| DMV—Department of Motor Vehicles | NGV—natural gas vehicle |
| DOC—diesel oxidation catalysts | NHTSA—National Highway Traffic Safety Administration |
| DOE—Department of Energy | NMHC—non-methane hydrocarbon |
| DOT—Department of Transportation | NO—nitrogen monoxide |
| DPF—diesel particulate filters | NO ₂ —nitrogen dioxide |
| DRI—Desert Research Institute | NO + NO ₂ —nitrous oxide |
| ECM—emission control monitoring | NO _x —oxides of nitrogen |
| EGR—exhaust gas recirculation | NREL—National Renewables Energy Lab |
| EPRI—Electric Power Research Institute | OBD—On-Board Diagnostics |
| ESD—emergency shut down | OCTA—Orange County Transit Authority |
| EV—electric vehicle | OEM—original equipment manufacturer |
| FCV—fuel cell vehicle | PAH—polyaromatic hydrocarbons |
| FTA—Federal Transit Administration | PbA—lead acid |
| FTP—federal test procedures | PCM—powertrain control module |
| g/bhp-hr—grams per brake horsepower per hour | PHEV—plug-in hybrid vehicle |
| GC/MS—gas chromatography/mass spectrometry | PM—particulate matter |
| GGE—gasoline gallon equivalents | PM2.5—particulate matter ≤ 2.5 microns |
| GHG—Greenhouse Gas | PM10—particulate matter ≤ 10 microns |
| GTL—gas to liquid | |
| H&SC—California Health and Safety Code | |

LIST OF ACRONYMS (cont'd)

PPM—parts per million
RDD&D—research, development, demonstration,
and deployment
RFS—renewable fuel standards
RI—reactive intermediates
RRC—rolling resistance co-efficient
RTA—Riverside Transit Agency
SBCCOG— South Bay Cities Council of
Governments
SCAB—South Coast Air Basin or “Basin”
SCAQMD—South Coast Air Quality Management
District
SCE—Southern California Edison
SCR—selective catalytic reduction
SI—spark ignited
SoCalGas—Southern California Gas Company (A
Sempra Energy Utility)
SULEV—super ultra-low emission vehicle
TC—total carbon
THC—total hydrocarbons
TO—task order
UDDS—urban dynamometer driving schedule
U.S.EPA—United States Environmental Protection
Agency
ULEV—ultra low emission vehicle
VMT—vehicle miles traveled
VOC—volatile organic compounds
WVU—West Virginia University
ZEV—zero emission vehicle

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Annual RECLAIM Audit Report for 2012 Compliance Year

March 4, 2014

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

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Barry R. Wallerstein, D.Env.

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LIST OF ABBREVIATIONS

| | |
|---------|---|
| ACEMS | Alternative Continuous Emissions Monitoring System(s) |
| AER | Annual Emission Report |
| APEP | Annual Permit Emissions Program |
| SCAQMD | South Coast Air Quality Management District |
| AQMP | Air Quality Management Plan |
| BACT | Best Available Control Technology |
| BARCT | Best Available Retrofit Control Technology |
| CAA | Clean Air Act |
| CARB | California Air Resources Board |
| CCAA | California Clean Air Act |
| CEQA | California Environmental Quality Act |
| CEMS | Continuous Emissions Monitoring System(s) |
| CGA | Cylinder Gas Audit |
| CPMS | Continuous Process Monitoring System(s) |
| EDR | Electronic Data Reporting |
| ERC | Emission Reduction Credit |
| IYB RTC | Infinite-Year Block RECLAIM Trading Credit |
| LAER | Lowest Achievable Emission Rate |
| LAP | Laboratory Approval Program |
| MDP | Missing Data Procedures |
| MRR | Monitoring, Reporting and Recordkeeping |
| MSERC | Mobile Source Emission Reduction Credit |
| NAAQS | National Ambient Air Quality Standard |
| NNI | No Net Increase |
| NOx | Oxides of Nitrogen |
| NSR | New Source Review |
| QCER | Quarterly Certification of Emissions Report |
| RACT | Reasonably Available Control Technology |
| RATA | Relative Accuracy Test Audit |
| RECLAIM | REgional CLean Air Incentives Market |
| RTC | RECLAIM Trading Credit |
| RTU | Remote Terminal Unit |
| SIP | State Implementation Plan |
| SOx | Oxides of Sulfur |
| SSC | Stationary Source Committee |
| SWG | Standing Working Group |
| USEPA | United States Environmental Protection Agency |
| VOC | Volatile Organic Compound |
| WATERS | Web Access To Electronic Reporting System |

EXECUTIVE SUMMARY

Introduction

The South Coast Air Quality Management District (SCAQMD) Governing Board adopted the REgional CLean Air Incentives Market (RECLAIM) program on October 15, 1993. The RECLAIM program represented a significant departure from traditional command-and-control regulations. RECLAIM's objective is to provide facilities with added flexibility in meeting emissions reduction requirements while lowering the cost of compliance. This is accomplished by establishing facility-specific emissions reduction targets without being prescriptive regarding the method of attaining compliance with the targets. Each facility may determine for itself the most cost-effective approach to reducing emissions, including reducing emissions at their facility, and/or purchasing RECLAIM Trading Credits (RTCs) from other RECLAIM facilities, or from other RTC holders.

Rule 2015 - Backstop Provisions includes provisions for annual program audits focusing on specific topics, as well as a one-time comprehensive audit of the program's first three years, to ensure that RECLAIM is meeting all state and federal requirements and other performance criteria. Rule 2015 also provides backstop measures if the specific criteria are not met. This report constitutes the Rule 2015 annual program audit report for Compliance Year 2012 (January 1 through December 31, 2012 for Cycle 1 and July 1, 2012 through June 30, 2013 for Cycle 2 facilities). This annual audit report covers activities for the 19th year of the program.

Chapter 1: RECLAIM Universe

When RECLAIM was adopted in October 1993, a total of 394 facilities were identified as the initial "universe" of sources subject to the requirements of RECLAIM. From program adoption through June 30, 2012, the overall changes in RECLAIM participants were 121 facilities included into the program, 70 facilities excluded from the program, and 169 facilities ceased operation. Thus, the RECLAIM universe consisted of 276 active facilities on July 1, 2012. From July 1, 2012 through the end of Compliance Year 2012 (December 31, 2012 for Cycle 1 facilities and June 30, 2013 for Cycle 2 facilities), two facilities were included into the RECLAIM universe, no facility was excluded, and five facilities (one facility in both the NO_x and SO_x universes and four in the NO_x universe only) either shut down or consolidated their operations at other facilities and are no longer in the active RECLAIM universe. These changes resulted in a net decrease of three facilities in the universe, bringing the total number of active RECLAIM facilities to 273 as of the end of Compliance Year 2012.

Chapter 2: RTC Allocations and Trading

The allocation reduction in NO_x RTCs adopted by the Governing Board on January 7, 2005 was completed in Compliance Year 2011. The amendments to SO_x RECLAIM, which the Governing Board adopted on November 5, 2010 to phase in SO_x reductions, will commence in Compliance Year 2013 and continue through Compliance Year 2019. That rule amendment will result in an overall

reduction of 5.7 tons/day (or 48.4%) in SO_x allocations when fully implemented (for Compliance Year 2019 and beyond). As a result, there were no programmatic allocation reductions in NO_x or SO_x RTCs during Compliance Year 2012.

The NO_x RTC supply increased by 12.2 tons and the SO_x RTC supply decreased by 16.2 tons during Compliance Year 2012. All of these changes, except 0.7 tons of NO_x RTCs, were due to allocation adjustments for clean fuel production pursuant to Rule 2002(c)(12). The remaining 0.7 tons of increased NO_x RTC supply was issued as the result of a merger between a RECLAIM facility and an adjacent non-RECLAIM facility (issued based on the operational history of the previously non-RECLAIM facility pursuant to Rule 2002). As a result, the NO_x and SO_x RTC supplies for Compliance Year 2012 were 9,689 tons and 4,283 tons, respectively.

During calendar year 2013, there were 367 registered RTC transactions with a total value of almost \$30.4 million traded, excluding the values reported for "swap" transactions (exchange of RTCs for other RTCs, rather than for money). Since the inception of the RECLAIM program in 1994, a total value of over \$1.05 billion dollars has been traded in the RTC trading market, excluding swaps. In terms of volume traded in calendar year 2013, a total of 4,443 tons of discrete NO_x RTCs, 557 tons of discrete SO_x RTCs, 1,779 tons of infinite-year block (IYB) NO_x RTCs and 438 tons of IYB SO_x RTCs were traded. RTC trading market activity during calendar year 2013 was comparable in terms of number of trades, but substantially higher in total value (by 62%) and volume (by 42%) compared to calendar year 2012.

The average annual prices of discrete-year NO_x RTCs traded during calendar year 2013 were \$549 per ton for Compliance Year 2012 RTCs, \$1,080 per ton for Compliance Year 2013 RTCs, and \$1,881 per ton for Compliance Year 2014 RTCs. The average annual prices for discrete-year SO_x RTCs traded during the same period were \$291 per ton for Compliance Year 2012 RTCs and \$485 per ton for RTCs for Compliance Year 2013. Therefore, the average annual prices for discrete NO_x and SO_x RTCs for all compliance years remained well below the \$15,000 per ton threshold to evaluate and review the compliance aspects of the program set forth by SCAQMD Rule 2015, as well as the \$40,067 per ton of NO_x and \$28,848 per ton of SO_x discrete RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f).

The average annual price during calendar year 2013 for IYB NO_x RTCs was \$45,914 per ton, and the average annual price for IYB SO_x RTCs was \$181,653 per ton. Therefore, average annual IYB RTC prices did not exceed the \$601,010 per ton of IYB NO_x RTCs or the \$432,727 per ton of IYB SO_x RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f).

Investors were again active in the RTC market during calendar year 2013. They were involved in 134 of the 229 discrete NO_x and SO_x trade registrations with price and 19 of 21 IYB NO_x and SO_x trades with price. Excluding one set of trades resulting from a set of changes of operator between two companies, investors were involved in 31% of total value and 44% of total volume for discrete NO_x trades, and 2% of total value and 1% of total volume for discrete SO_x

trades. Investors were involved in 100% of the IYB NO_x and SO_x trades with price. At the end of calendar year 2013, investors' holdings of IYB NO_x RTCs and IYB SO_x RTCs were 4.9% and 0.9% of the total RECLAIM RTCs, respectively.

Chapter 3: Emission Reductions Achieved

For Compliance Year 2012, aggregate NO_x emissions were below total allocations by 19% and aggregate SO_x emissions were below total allocations by 40%. No emissions associated with breakdowns were excluded from reconciliation with facility allocations in Compliance Year 2012. Accordingly, no mitigation is necessary to offset excluded emissions due to approved Breakdown Emission Reports. Therefore, based on audited emissions, it can be concluded that RECLAIM achieved its targeted emission reductions for Compliance Year 2012. With respect to the Rule 2015 backstop provisions, Compliance Year 2012 aggregate NO_x and SO_x emissions were both well below aggregate allocations and, as such, did not trigger the requirement to review the RECLAIM program.

Chapter 4: New Source Review Activity

The annual program audit assesses New Source Review (NSR) activity from RECLAIM facilities in order to ensure that RECLAIM is complying with federal NSR requirements and state no net increase (NNI) in emissions requirements, while providing flexibility to facilities in managing their operations and allowing new sources into the program. In Compliance Year 2012, a total of 46 NO_x RECLAIM facilities had NSR NO_x emission increases, and four SO_x RECLAIM facilities had NSR SO_x emission increases due to expansion or modification. Consistent with all prior compliance years, there were sufficient NO_x and SO_x RTCs available to allow for expansion, modification, and modernization by RECLAIM facilities.

RECLAIM is required to comply with federal NSR emissions offset requirements at a 1.2-to-1 offset ratio programmatically for NO_x emission increases and a 1-to-1 offset ratio for SO_x emission increases on a programmatic basis. In Compliance Year 2012, RECLAIM provided an offset ratio based on the compliance year's total unused allocations and total NSR emission increases of 9-to-1 for NO_x, demonstrating federal equivalency. RECLAIM inherently complies with the federally-required 1-to-1 SO_x offset ratio for any compliance year, provided aggregate SO_x emissions under RECLAIM are lower than or equal to aggregate SO_x allocations for that compliance year. As shown in Chapter 3, there was no programmatic SO_x exceedance during Compliance Year 2012; in fact, there was a surplus of SO_x RTCs. Therefore, RECLAIM more than complied with the federally-required SO_x offset ratio and further quantification of the SO_x offset ratio is unnecessary. Compliance with the federally-required offset ratio also demonstrates compliance with any applicable state NNI requirements for new or modified sources. In addition, RECLAIM requires application of, at a minimum, California Best Available Control Technology (BACT), which is very similar to federal Lowest Achievable Emission Rate (LAER), for all new or modified sources with emission increases. In addition, more stringent control technology can be required pursuant to RECLAIM if it is

determined to be cost effective as compared to AQMP measures or adopted SCAQMD rules.

Chapter 5: Compliance

Of the 278 NO_x RECLAIM facilities during Compliance Year 2012, a total of 265 facilities (95%) complied with their NO_x allocations, and all but one of the 33 SO_x facilities (97%) complied with their SO_x allocations. The 13 NO_x facilities that exceeded their NO_x allocations had aggregate NO_x emissions of 1,208 tons and did not have adequate allocations to offset 361.1 tons (or 29.9%) of their combined emissions. This exceedance amount is small compared to the overall allocations for Compliance Year 2012 (3.7% of total NO_x allocations). One SO_x facility had SO_x emissions that exceeded its SO_x allocations by only three pounds. The exceedances from these 13 facilities (12 NO_x-only facilities and one NO_x and SO_x facility) did not impact the overall RECLAIM emission reduction goals. Pursuant to Rule 2010(b)(1)(A), all 13 facilities had their respective exceedances deducted from their annual allocations for the compliance year subsequent to the date of SCAQMD's determination that the facilities exceeded their Compliance Year 2012 allocations. The overall RECLAIM NO_x and SO_x emission reduction targets and goals were met for Compliance Year 2012 (*i.e.*, aggregate emissions for all RECLAIM facilities were well below aggregate allocations).

Chapter 6: Reported Job Impacts

This chapter compiles data as reported by RECLAIM facilities in their Annual Permit Emissions Program (APEP) reports. The analysis focuses exclusively on job impacts at RECLAIM facilities and determination if those job impacts were directly attributable to RECLAIM as reported by those facilities. There may be additional effects of the RECLAIM program on the local economy outside of RECLAIM facilities (*e.g.*, generating jobs for consulting firms, source testing firms and CEMS vendors) and also factors other than RECLAIM (*e.g.*, the prevailing economic climate), that impact the job market. These factors are not evaluated in this report. Also job losses and job gains are strictly based on RECLAIM facilities' reported information. AQMD is not able to independently verify the reported job impacts information.

According to the Compliance Year 2012 employment survey data gathered from APEP reports, RECLAIM facilities reported a net gain of 2,026 jobs, representing 2% of their total employment. All of the facilities that reported job losses and job gains cited factors other than RECLAIM as the reasons for these changes in employment figures. Furthermore, none of the five RECLAIM facilities listed as shutdown during Compliance Year 2012 cited RECLAIM as a factor contributing to the decision to shutdown.

Chapter 7: Air Quality and Public Health Impacts

Audited RECLAIM emissions have been in an overall downward trend since the program's inception. Compliance Year 2012 NO_x emissions increased slightly (7.0%) relative to Compliance Year 2011 and Compliance Year 2012 SO_x emissions were 6.4% less when compared to last year. Quarterly calendar year 2012 NO_x emissions fluctuated within four percent of the mean NO_x emissions for the year. Quarterly calendar year 2012 SO_x emissions fluctuated within ten

percent of the year's mean SOx emissions. There was no significant shift in seasonal emissions from the winter season to the summer season.

The California Clean Air Act (CCAA) required a 50% reduction in population exposure to ozone, relative to a baseline averaged over three years (1986 through 1988), by December 31, 2000. The Basin achieved the December 2000 target for ozone well before the deadline. In calendar year 2013, the per capita exposure to ozone (the average length of time each person is exposed) continued to be well below the target set for December 2000.

Air toxic health risk is primarily caused by emissions of certain volatile organic compounds (VOCs) and fine particulates, such as metals. RECLAIM facilities are subject to the same air toxic, VOC, and particulate matter regulations as other sources in the Basin. All sources are subject, where appropriate, to the NSR rule for toxics (Rule 1401). In addition, new or modified sources with NOx or SOx emission increases are required to be equipped with BACT, which minimizes to the extent feasible the increase of NOx and SOx emissions. RECLAIM and non-RECLAIM facilities that emit toxic air contaminants are required to report those emissions to SCAQMD. Those toxics emissions reports are used to identify candidates for the Toxics Hot Spots program (AB2588), which in turn quantifies toxic risk from facilities in the program and identifies those facilities that are required to do public notice and/or reduce their health risk levels to the public. There is no evidence that RECLAIM has caused or allowed higher toxic risk in areas adjacent to RECLAIM facilities.

INTRODUCTION

The South Coast Air Quality Management District (SCAQMD) REgional CLean Air Incentives Market (RECLAIM) program was adopted in October 1993 and replaced certain command-and-control rules regarding oxides of nitrogen (NO_x) and oxides of sulfur (SO_x) with a new market incentives program for facilities that meet the inclusion criteria. The goals of RECLAIM are to provide facilities with added flexibility in meeting emissions reduction requirements while lowering the cost of compliance. The RECLAIM program was designed to meet all state and federal Clean Air Act and other air quality regulations and program requirements, as well as various other performance criteria, such as equivalent or better air quality improvement, enforcement, implementation costs, job impacts, and no adverse public health impacts.

Since RECLAIM represents a significant change from traditional command-and-control regulations, RECLAIM rules include provisions for program audits in order to verify that the RECLAIM objectives are being met. The rules provide for a comprehensive audit of the first three years of program implementation and for annual program audits. The audit results are used to help determine whether any program modifications are appropriate. SCAQMD staff has completed the initial tri-annual program audit and each individual annual program audit report through the 2012 Compliance Year Audit.

This report presents the annual program audit and progress report of RECLAIM's nineteenth compliance year (January 1 through December 31, 2012 for Cycle 1 and July 1, 2012 through June 30, 2013 for Cycle 2 RECLAIM facilities), also known as Compliance Year 2012. As required by Rule 2015(b)(1) – Annual Audits, this audit assesses:

- Emission reductions;
- Per capita exposure to air pollution;
- Facilities permanently ceasing operation of all sources;
- Job impacts;
- Average annual price of each type of RECLAIM Trading Credit (RTC);
- Availability of RTCs;
- Toxic risk reductions;
- New Source Review permitting activity;
- Compliance issues, including a list of facilities that were unable to reconcile emissions for that compliance year;
- Emission trends/seasonal fluctuations;
- Emission control requirement impacts on stationary sources in the program compared to other stationary sources identified in the Air Quality Management Plan (AQMP); and
- Emissions associated with equipment breakdowns.

The annual program audit report is organized into the following chapters:

1. ***RECLAIM Universe***
This chapter discusses summarizes changes to the universe of RECLAIM sources that occurred up until July 1, 2012 (covered under the Annual RECLAIM Audit Report for 2011 Compliance Year), then discusses changes to the RECLAIM universe of sources in detail through the end of Compliance Year 2012.
2. ***RTC Allocations and Trading***
This chapter summarizes changes in emissions allocations in the RECLAIM universe, RTC supply and RTC trading activity, average annual prices, availability of RTCs, and market participants.
3. ***Emission Reductions Achieved***
This chapter assesses emissions trends and progress towards emission reduction goals for RECLAIM sources, emissions associated with equipment breakdowns, and emissions control requirement impacts on RECLAIM sources compared to other stationary sources. It also discusses the latest amendments to the RECLAIM program.
4. ***New Source Review Activity***
This chapter summarizes New Source Review (NSR) activities at RECLAIM facilities.
5. ***Compliance***
This chapter discusses compliance activities and the compliance status of RECLAIM facilities. It also evaluates the effectiveness of SCAQMD's compliance program, as well as the monitoring, reporting, and recordkeeping (MRR) protocols for NOx and SOx.
6. ***Reported Job Impacts***
This chapter addresses job impacts and facilities permanently ceasing operation of all emission sources.
7. ***Air Quality and Public Health Impacts***
This chapter discusses air quality trends in the South Coast Air Basin, seasonal emission trends for RECLAIM sources, per capita exposure to air pollution, and the toxic impacts of RECLAIM sources.

CHAPTER 1 RECLAIM UNIVERSE

Summary

When RECLAIM was adopted in October 1993, a total of 394 facilities were identified as the initial “universe” of sources subject to the requirements of RECLAIM. From program adoption through June 30, 2012, the overall changes in RECLAIM participants were 121 facilities included into the program, 70 facilities excluded from the program, and 169 facilities ceased operation. Thus, the RECLAIM universe consisted of 276 active facilities on July 1, 2012. From July 1, 2012 through the end of Compliance Year 2012 (December 31, 2012 for Cycle 1 facilities and June 30, 2013 for Cycle 2 facilities), two facilities were included into the RECLAIM universe, no facility was excluded, and five facilities (one facility in both the NOx and SOx universes and four in the NOx universe only) either shut down or consolidated their operations at other facilities and are no longer in the active RECLAIM universe. These changes resulted in a net decrease of three facilities in the universe, bringing the total number of active RECLAIM facilities to 273 as of the end of Compliance Year 2012.

Background

The RECLAIM program replaced the traditional “command-and-control” rules for a defined list of facilities participating in the program (the RECLAIM “universe”). The criteria for inclusion in the RECLAIM program are specified in Rule 2001 – Applicability. Facilities are generally subject to RECLAIM if they have NOx or SOx emissions greater than or equal to four tons per year in 1990 or any subsequent year. However, certain facilities are categorically excluded from RECLAIM. The categorically excluded facilities include dry cleaners; restaurants; police and fire fighting facilities; construction and operation of landfill gas control, processing or landfill gas energy facilities; public transit facilities, potable water delivery operations; facilities that converted all sources to operate on electric power prior to October 1993; and facilities, other than electric generating facilities established on or after January 1, 2001, located in the Riverside County portions of the Mojave Desert Air Basin or the Salton Sea Air Basin.

Other categories of facilities are not automatically included but do have the option to enter the program. These categories include electric utilities (exemption only for the SOx program); equipment rental facilities; facilities possessing solely “various locations” permits; schools or universities; portions of facilities conducting research operations; ski resorts; prisons; hospitals; publicly-owned municipal waste-to-energy facilities; publically-owned sewage treatment facilities operating consistent with an approved regional growth plan; electrical power generating systems owned and operated by the Cities of Burbank, Glendale, or Pasadena or their successors; facilities on San Clemente Island; agricultural facilities; and electric generating facilities that are new on or after January 1, 2001 and located in the Riverside County portions of the Mojave Desert Air Basin or the Salton Sea Air Basin. An initial universe of 394 RECLAIM facilities was developed using the inclusion criteria initially adopted in the RECLAIM program based on 1990, 1991 and 1992 facility emissions data.

A facility that is not in a category that is specifically excluded from the program may voluntarily join RECLAIM regardless of its emission level. Additionally, a facility may be required to enter the RECLAIM universe if:

- It increases its NO_x and/or SO_x emissions above the four ton per year threshold; or
- It ceases to be categorically excluded and its reported NO_x and/or SO_x emissions are greater than or equal to four tons per year; or
- It is determined by SCAQMD staff to meet the applicability requirements of RECLAIM, but was initially misclassified as not subject to RECLAIM.

At the time of joining RECLAIM, each RECLAIM facility is issued an annually declining allocation of emission credits (“RECLAIM Trading Credits” or “RTCs”) based on its historic production level (if the facility existed prior to January 1, 1993), external offsets it previously provided, and any Emission Reduction Credits (ERCs) generated at and held by the facility. Each RECLAIM facility’s RTC holdings constitute an annual emissions budget. RTCs may be bought or sold as the facility deems appropriate (see Chapter 2 – RTC Allocations and Trading).

RECLAIM facilities that permanently go out of business are removed from the active emitting RECLAIM universe, but may retain their remaining RTCs and participate in the trading market.

Universe Changes

The RECLAIM rules include several mechanisms to exclude facilities originally included in the program and to add new facilities. The overall changes to the RECLAIM universe from the date of adoption (October 15, 1993) through June 30, 2012 (the last day of Compliance Year 2011 for Cycle 2 facilities) were: the inclusion of 121 facilities (including 33 facilities created by partial change of operator of existing RECLAIM facilities), the exclusion of 70 facilities, and the shutdown of 169 facilities. Thus, the net change in the RECLAIM universe from January 1, 1994 through June 30, 2012 was a decrease of 118 facilities from 394 to 276 facilities. From July 1, 2012 through the end of Compliance Year 2012 (December 31, 2012 for Cycle 1 facilities and June 30, 2013 for Cycle 2 facilities), two facilities were included, no facility was excluded, and five facilities shut down. These changes brought the total number of facilities in the RECLAIM universe to 273 facilities. The Compliance Year 2012 RECLAIM universe includes 241 NO_x-only, no SO_x-only, and 32 both NO_x and SO_x RECLAIM facilities. The list of active facilities in the RECLAIM universe as of the end of Compliance Year 2012 is provided in Appendix A.

Facility Inclusions and Exclusions

Two facilities were included in the RECLAIM universe from July 1, 2012 through the end of Compliance Year 2012. One of these facilities elected to enter the RECLAIM program and the other was created through the partial change of operator of an existing RECLAIM facility (one facility was split into two). The facility that opted to enter RECLAIM was initially permitted post-October 15, 1993, and is considered “new” as defined by SCAQMD Rule 2000 – General. Appendix B lists these two facilities and the reasons for their inclusion.

Additionally, one existing NO_x RECLAIM facility merged with a neighboring non-RECLAIM facility through change of operator of the RECLAIM facility to the operator of the non-RECLAIM facility, bringing the formerly non-RECLAIM facility into the program. However, this did not result in a change to the overall number of facilities in RECLAIM since it was a merger. No facility was excluded from the RECLAIM universe during Compliance Year 2012.

Staff has periodically initiated the process of reviewing past Annual Emission Reports from non-RECLAIM facilities to determine applicability of RECLAIM pursuant to Rule 2001(b) – Criteria for Inclusion in RECLAIM. Commencing in 2012, an annual review process was implemented. This facility inclusion process begins with SCAQMD staff compiling a list of non-RECLAIM (pollutant-specific) facilities that emitted NO_x or SO_x emissions greater than or equal to four tons per year, as reported under the Annual Emission Reporting (AER) program, for potential inclusion into RECLAIM. This part of the process involves screening for only emissions from equipment that are subject to RECLAIM (*e.g.*, emissions from on-site, off-road mobile sources are not included). From this initial list, each facility's business activity/operations are evaluated based on SCAQMD's records for possible categorical exemption pursuant to Rule 2001(i). Facilities that qualify under these categorical exemptions are removed from the list. The remaining facilities are informed of their potential inclusion into RECLAIM and are given the opportunity to provide records to demonstrate why the facility should not be included under RECLAIM. This may include additional information about the facility's operations that would qualify it for categorical exemption from RECLAIM pursuant to Rule 2001(i), or correcting their AER-reported emissions with supporting documentation. Once a facility has qualified for inclusion, a draft facility permit is prepared, sent to the facility for comments, finalized and issued.

In October 2012, SCAQMD informed 60 facilities in writing of potential inclusion into RECLAIM based upon their reported emissions in past years (58 potential NO_x facilities and two potential SO_x facilities, both of which were already NO_x facilities). No facilities were included into RECLAIM during Compliance Year 2012 as a result of this evaluation process. Three facilities were included into NO_x RECLAIM during the 2013 compliance year and are not addressed in this report because they did not impact the RECLAIM universe during Compliance Year 2012. At the time of composing this report, twenty-eight of the 60 facilities remain under review for inclusion. As stated above, the inclusion review process has now been shifted to an annual process. Additionally, 13 facilities identified through this annual process in 2013 are being evaluated for potential inclusion. Additional inclusions will be addressed in future RECLAIM annual program audits as facility eligibility is confirmed.

Facilities Permanently Ceasing Operations

Five RECLAIM facilities permanently ceased operations between July 1, 2012 and the end of Compliance Year 2012. Two of the facilities each consolidated their operations with separate existing RECLAIM facilities within the SCAQMD. One power plant shut down as air quality mitigation for the start-up of a new power plant located in the SCAQMD. Another facility shut down its operation, its only piece of process equipment was rendered inoperable, and it sold the property to an adjacent facility. The facility that bought the property is a university and became RECLAIM exempt, and categorically excluded from

RECLAIM pursuant to Rule 2001(i)(2)(H). The last shutdown facility moved its operation to a new plant in a different state. Four of the five facilities permanently ceasing operations were in NOx RECLAIM, and the remaining shutdown facility was in both NOx and SOx RECLAIM. Appendix C lists these facilities and provides brief descriptions of the reported reasons for their closures.

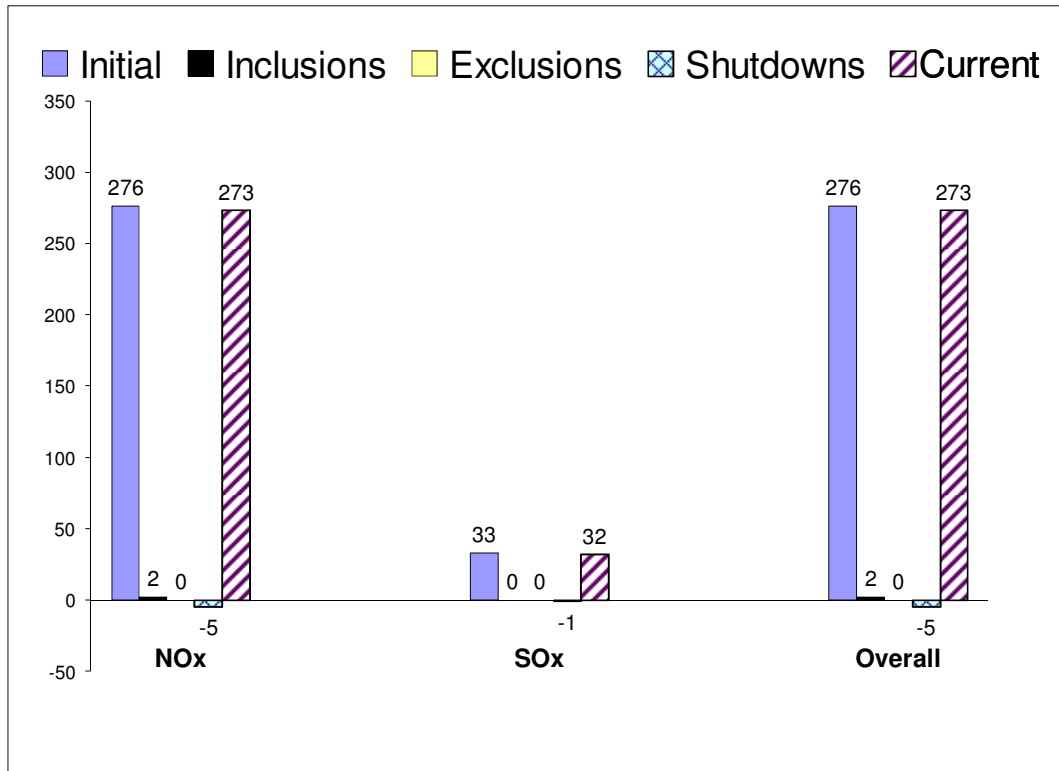
The above mentioned changes to the RECLAIM Universe resulted in a net decrease of three facilities in the RECLAIM universe. Table 1-1 summarizes changes in the RECLAIM universe between the start of the program and June 30, 2013. Overall changes to the RECLAIM universe that occurred from July 1, 2012 through June 30, 2013 are illustrated in Figure 1-1.

**Table 1-1
RECLAIM Universe Changes**

| | NOx Facilities | SOx Facilities | Total* Facilities |
|---|---------------------------|---------------------------|------------------------------|
| Universe – October 15, 1993 (Start of Program) | 392 | 41 | 394 |
| Inclusions – October 15, 1993 through June 30, 2012 | 121 | 12 | 121 |
| Exclusions – October 15, 1993 through June 30, 2012 | -69 | -4 | -70 |
| Shutdowns – October 15, 1993 through June 30, 2012 | -168 | -16 | -169 |
| Universe – June 30, 2012 | 276 | 33 | 276 |
| Inclusions – July 1, 2012 through end of Compliance Year 2012 | 2 | 0 | 2 |
| Exclusions – July 1, 2012 through end of Compliance Year 2012 | 0 | 0 | 0 |
| Shutdowns – July 1, 2012 through end of Compliance Year 2012 | -5 | -1 | -5 |
| Universe – End of Compliance Year 2012 | 273 | 32 | 273 |

* Total Facilities is not the sum of NOx and SOx facilities due to the overlap of some facilities being in both the NOx and SOx universes.

Figure 1-1
Universe Changes from July 1, 2012 through End of Compliance Year 2012



CHAPTER 2

RTC ALLOCATIONS AND TRADING

Summary

The allocation reduction in NOx RTCs adopted by the Governing Board on January 7, 2005 was completed in Compliance Year 2011. The amendments to SOx RECLAIM, which the Governing Board adopted on November 5, 2010 to phase in SOx reductions, will commence in Compliance Year 2013 and continue through Compliance Year 2019. That rule amendment will result in an overall reduction of 5.7 tons/day (or 48.4%) in SOx allocations when fully implemented (for Compliance Year 2019 and beyond). As a result, there were no programmatic allocation reductions in NOx or SOx RTCs during Compliance Year 2012.

The NOx RTC supply increased by 12.2 tons and the SOx RTC supply decreased by 16.2 tons during Compliance Year 2012. All of these changes, except 0.7 tons of NOx RTCs, were due to allocation adjustments for clean fuel production pursuant to Rule 2002(c)(12). The remaining 0.7 tons of increased NOx RTC supply was issued as the result of a merger between a RECLAIM facility and an adjacent non-RECLAIM facility (issued based on the operational history of the previously non-RECLAIM facility pursuant to Rule 2002). As a result, the NOx and SOx RTC supplies for Compliance Year 2012 were 9,689 tons and 4,283 tons, respectively.

During calendar year 2013, there were 367 registered RTC transactions with a total value of almost \$30.4 million traded, excluding the values reported for "swap" transactions (exchange of RTCs for other RTCs, rather than for money). Since the inception of the RECLAIM program in 1994, a total value of over \$1.05 billion dollars has been traded in the RTC trading market, excluding swaps. In terms of volume traded in calendar year 2013, a total of 4,443 tons of discrete NOx RTCs, 557 tons of discrete SOx RTCs, 1,779 tons of infinite-year block (IYB) NOx RTCs and 438 tons of IYB SOx RTCs were traded. RTC trading market activity during calendar year 2013 was comparable in terms of number of trades, but substantially higher in total value (by 62%) and volume (by 42%) compared to calendar year 2012.

The average annual prices of discrete-year NOx RTCs traded during calendar year 2013 were \$549 per ton for Compliance Year 2012 RTCs, \$1,080 per ton for Compliance Year 2013 RTCs, and \$1,881 per ton for Compliance Year 2014 RTCs. The average annual prices for discrete-year SOx RTCs traded during the same period were \$291 per ton for Compliance Year 2012 RTCs and \$485 per ton for RTCs for Compliance Year 2013. Therefore, the average annual prices for discrete NOx and SOx RTCs for all compliance years remained well below the \$15,000 per ton threshold to evaluate and review the compliance aspects of the program set forth by SCAQMD Rule 2015, as well as the \$40,067 per ton of NOx and \$28,848 per ton of SOx discrete RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f).

The average annual price during calendar year 2013 for IYB NOx RTCs was \$45,914 per ton, and the average annual price for IYB SOx RTCs was \$181,653 per ton. Therefore, average annual IYB RTC prices did not exceed the \$601,010 per ton of IYB NOx RTCs or the \$432,727 per ton of IYB SOx RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f).

Investors were again active in the RTC market during calendar year 2013. They were involved in 134 of the 229 discrete NOx and SOx trade registrations with price and 19 of 21 IYB NOx and SOx trades with price. Excluding one set of trades resulting from a set of changes of operator between two companies, investors were involved in 31% of total value and 44% of total volume for discrete NOx trades, and 2% of total value and 1% of total volume for discrete SOx trades. Investors were involved in 100% of the IYB NOx and SOx trades with price. At the end of calendar year 2013, investors' holdings of IYB NOx RTCs and IYB SOx RTCs were 4.9% and 0.9% of the total RECLAIM RTCs, respectively.

Background

SCAQMD issues each RECLAIM facility emissions allocations for each compliance year, according to the methodology specified in Rule 2002 – Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx), based on its historic production levels as reported to SCAQMD in its emission inventory reports (if the facility existed prior to January 1, 1993) and its listed starting emission factor in Tables 1 or 2, any qualified¹ external offsets it previously provided, and any unused ERCs generated at and held by the facility. These allocations are issued as RTCs, denominated in pounds of NOx or SOx with a specified 12-month term. Each RTC may only be used for emissions occurring within the term of that RTC. The RECLAIM program has two staggered compliance cycles—Cycle 1 with a compliance period of January 1 through December 31 of each year, and Cycle 2 with a compliance period of July 1 of each year through June 30 of the following year. Each RECLAIM facility is assigned to either Cycle 1 or Cycle 2 and the RTCs it is issued (if any) have corresponding periods of validity.

The issuance of allocations for future years provides RECLAIM facilities guidance regarding their future emission reduction requirements. Facilities can plan their compliance strategies by reducing actual emissions or securing needed RTCs through trade registrations (or a combination of the two), based on their operational needs.

RECLAIM facilities may acquire RTCs issued for either cycle through trading and apply them to emissions, provided that the RTCs are used for emissions occurring within the RTCs' period of validity and the trades are made during the appropriate time period. RECLAIM facilities have until 30 days after the end of each of the first three quarters of each compliance year to reconcile their quarterly and year-to-date emissions, and until 60 days after the end of each compliance year to reconcile their last quarter and total annual emissions by securing adequate RTCs. Please note that, although other chapters in this report

¹ Only external offsets provided at a one-to-one offset ratio after the base year used for allocation quantification purposes.

present and discuss Compliance Year 2012 data, RTC trading and price data discussed in this chapter are for calendar year 2013.

RTC Allocations and Supply

The methodology for determining RTC allocations is established by Rule 2002. According to the rule, allocations may change when the universe of RECLAIM facilities changes, emissions associated with the production of re-formulated gasoline increase or decrease, reported historical activity levels are updated, or starting emission factors are changed. In addition to these SCAQMD-allocated RTCs, RTCs may be generated by conversion of emissions reduction credits from mobile and area sources pursuant to approved protocols. The total RTC supply in RECLAIM is made up of all RECLAIM facilities' allocations, conversions of ERCs owned by RECLAIM and non-RECLAIM facilities (the window of opportunity to convert ERCs to RTCs other than during the process of a non-RECLAIM facility entering the program closed June 30, 1994), emissions associated with the production of re-formulated gasoline, and conversion of emission reduction credits from mobile sources and area sources pursuant to approved protocols. Changes in the RTC supply during Compliance Year 2012 are discussed below.

Allocations Adjustments Due to Inclusion and Exclusion of Facilities

Allocations for a facility are based on the facility's historical operations, their starting emission factor, emission reduction requirements under the command-and-control rules subsumed by RECLAIM, AQMP control measures subsumed by RECLAIM, and adjustments for Best Available Retrofit Control Technology (BARCT) equivalency. Facilities entering RECLAIM after 1994 may receive allocations just like facilities that were included at the beginning of the program. However, allocations issued for these facilities are only applicable for the compliance year upon entry and forward. In addition, these facilities are issued allocations and Non-tradable/Non-usable Credits for Compliance Year 1994 for the sole purpose of establishing their starting allocation to ensure compliance with offset requirements under Rule 2005 - New Source Review for RECLAIM and the trading zone restriction to ensure net ambient air quality improvement within the sensitive zone established by Health and Safety Code §40410.5. These Compliance Year 1994 credits are not allowed to be used to offset current emissions because they are expired.

One new facility opted into the RECLAIM program and another facility was created through a partial change of operator in Compliance Year 2012. Both facilities belong to the NO_x RECLAIM program. However, neither facility qualified for allocations pursuant to Rule 2002 – Allocations for Oxides Nitrogen (NO_x) and Oxides of Sulfur (SO_x). Additionally, one existing NO_x RECLAIM facility merged with a neighboring non-RECLAIM facility through change of operator of the RECLAIM facility to the operator of the non-RECLAIM facility. This previously non-RECLAIM facility is an existing facility as defined in Rule 2002 and was therefore eligible for additional allocations. A total of 0.7 tons per year of NO_x allocations were issued to the merged facility for the previously non-RECLAIM facility. There were no facilities excluded from the RECLAIM program in Compliance Year 2012.

Allocations Adjustments Due to Clean Fuel Production

Rule 2002(c)(12) – Clean Fuel Adjustment to Starting Allocation, provides refineries with RTCs to compensate for their actual emissions increases caused by the production of CARB Phase II reformulated gasoline. The amount of these RTCs is based on actual emissions for the subject compliance year and historical production data. Based on the historical production data submitted, qualifying refineries were issued in 2000 an aggregate baseline of 86.5 tons of NOx and 42.3 tons of SOx for Compliance Year 1999, 101.8 tons of NOx and 41.4 tons of SOx for Compliance Year 2000, and 98.4 tons of NOx and 40.2 tons of SOx for each subsequent Compliance Year. These refineries are required to submit, at the end of each compliance year in their Annual Permit Emissions Program (APEP) report, records to substantiate actual emission increases due solely to the production of reformulated gasoline. If actual emission increases for a subject year are different than the projected amount, the RTCs issued are adjusted accordingly (*i.e.*, excess RTCs issued are deducted if emissions were less than projected; conversely, additional RTCs are issued if emissions were higher than projected).

As a result of the amendment to Rule 2002 in January 2005 to further reduce RECLAIM NOx allocations, the NOx historical baseline Clean Fuel Adjustments for Compliance Year 2007 and subsequent years held by the facility were also reduced by the appropriate factors as stated in Rule 2002(f)(1)(A). On the other hand, Rule 2002(c)(12) entitles refineries to a Clean Fuels adjustment based on actual emissions. Therefore, each refinery is subject to an adjustment at the end of each compliance year equal to the difference between the amount of actual emission increases due solely to production of reformulated gasoline at each refinery and the amount of credits it was issued in 2000 after discounting by the factors for the corresponding compliance year. For Compliance Year 2012, the overall effect of adjusting NOx allocations to account for these differences was a total of 11.5 tons of NOx RTCs (0.1% of total NOx allocation for Compliance Year 2012) added to, and 16.2 tons of SOx RTCs (0.4% of total SOx allocation for Compliance Year 2012) deducted from refineries' Compliance Year 2012 holdings.

Changes in RTC Allocations Due to Activity Corrections

RECLAIM facilities' allocations are determined by their reported historical activity levels (*e.g.*, fuel usage, material usage, or production). If a facility makes corrections to its reported activity levels, the allocation is adjusted accordingly. There were no changes in RTC allocations due to activity corrections in Compliance Year 2012.

Conversions of Other Types of Emission Reduction Credits

Conversions of Mobile Source Emission Reduction Credits (MSERCs) and other types of emission reduction credits, other than regular stationary source ERCs issued under Regulation XIII – New Source Review, to RTCs are allowed under Rule 2008 – Mobile Source Credits, and several programs under Regulation XVI – Mobile Source Offset Programs and Regulation XXV – Intercredit Trading. Conversion of these credits to RTCs is allowed based on the respective approved protocol specified in each rule. Currently, Rules 1610 – Old-Vehicle Scrapping and 1612 – Credits for Clean On-Road Vehicles allow the creation of

MSERCs. However, there are no State Implementation Plan (SIP) approved protocols for conversion of MSERCs to RTCs. As a result, no new RTCs were issued as a result of conversion of other types of emission reduction credits in Compliance Year 2012.

Net Changes in RTC Allocations

The changes to RTC supplies described in the above sections resulted in a net increase of 12.2 tons of NOx RTCs (0.13% of the total) and a decrease of 16.2 tons of SOx RTCs (0.38% of total) for Compliance Year 2012. Table 2-1 summarizes the changes in NOx and SOx RTC supplies that occurred in Compliance Year 2012 pursuant to Rule 2002.

**Table 2-1
Changes in NOx and SOx RTC Supplies during Compliance Year 2012 (tons/year)**

| Source | NOx | SOx |
|----------------------------------|-------------|--------------|
| Universe changes | 0.7 | 0 |
| Clean Fuel/Reformulated Gasoline | 11.5 | -16.2 |
| Activity corrections | 0 | 0 |
| MSERCs | 0 | 0 |
| Net change | 12.2 | -16.2 |

Note: The data in this table represents the changes that occurred over the course of Compliance Year 2012 to the Compliance Year 2012 aggregate NOx and SOx RTC supplies originally issued pursuant to Rule 2002, not the difference between 2012 aggregate RTC supply and that for any other compliance year.

Allocation Reduction Resulting from BARCT Review

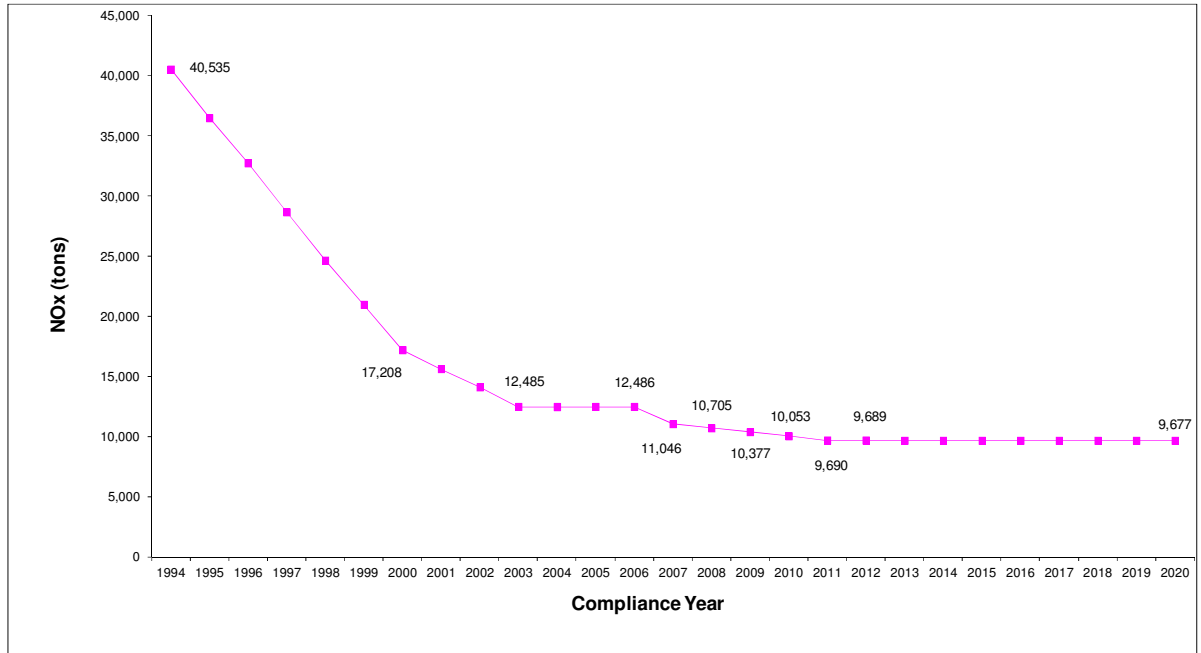
Pursuant to California Health and Safety Code §40440, SCAQMD is required to monitor the advancement in BARCT and periodically re-assess the RECLAIM program to ensure that RECLAIM achieves equivalent emission reductions to the command-and-control BARCT rules it subsumes. This assessment is done periodically as part of AQMP development. This process resulted in 2003 AQMP Control Measure #2003 CMB-10 – Additional NOx Reductions for RECLAIM (NOx) calling for additional NOx reductions from RECLAIM sources. SCAQMD staff then started the rule amendment process, including a detailed analysis of control technologies that qualified as BARCT for NOx, and held lengthy discussions with stakeholders—including regulated industry, environmental groups, the California Air Resources Board (CARB), and the United States Environmental Protection Agency (USEPA). On January 7, 2005, the Governing Board implemented CMB-10 by adopting changes to the RECLAIM program that resulted in a 22.5% reduction of NOx allocations from all RECLAIM facilities. The reductions were phased in commencing in Compliance Year 2007 and have been fully implemented since Compliance Year 2011.

Similarly, on November 5, 2010, the Governing Board adopted changes to the RECLAIM program implementing the 2007 AQMP Control Measure CMB-02 – Further SOx Reductions for RECLAIM (SOx). Specifically, these amendments will result in an overall reduction of 5.7 tons SOx per day when fully implemented in Compliance Year 2019 (the reductions are being phased in from Compliance Year 2013 through Compliance Year 2019: 3.0 tons per day in 2013, 4.0 tons

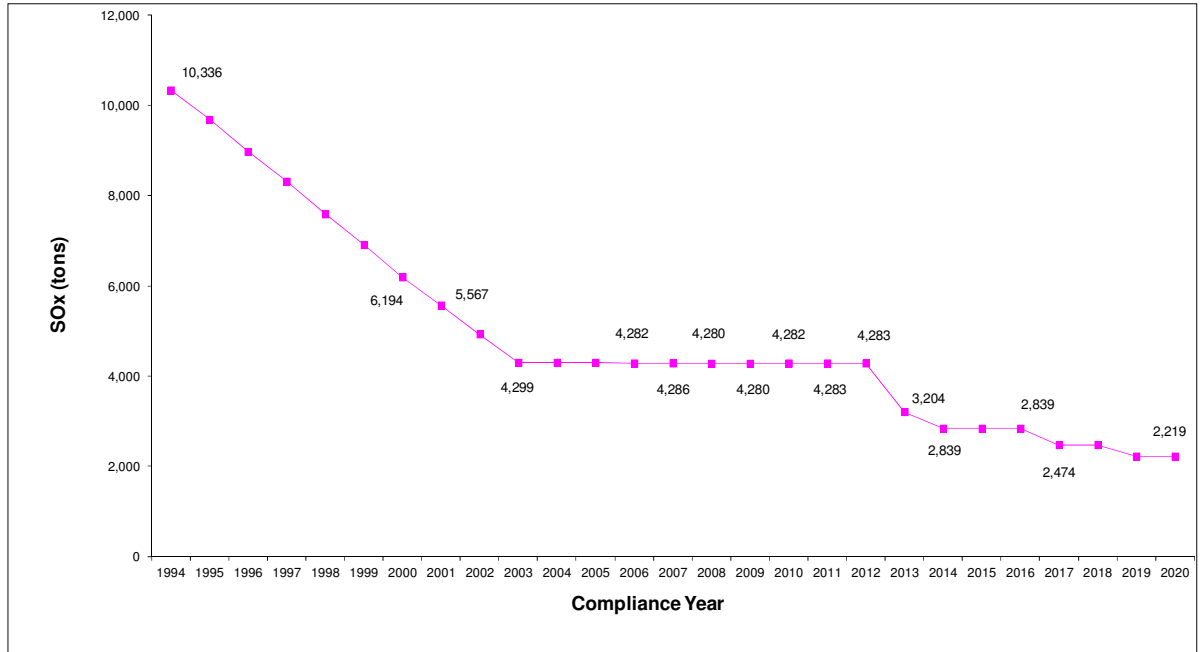
per day in years 2014 through 2016, 5.0 tons per day in 2017 and 2018, and a cumulative 5.7 tons per day starting in 2019 and continuing thereafter). This reduction in SOx is an essential part of the South Coast Air Basin's effort in attaining the federal 24-hour average PM2.5 standard by the year 2020.

Figures 2-1 and 2-2 illustrate the total NOx and SOx RTC supplies through the end of Compliance Year 2020 incorporating all the changes discussed above.

Figure 2-1
NOx RTC Supply



**Figure 2-2
SOx RTC Supply**



On December 7, 2012 the SCAQMD Governing Board adopted the 2012 AQMP, which includes Control Measure CMB-01 – Further NOx Reductions for RECLAIM, calling for reductions of NOx emissions within the RECLAIM program by 3 to 5 tons per day. The rule development and adoption process for this latest NOx reduction is currently ongoing. The actual amount of NOx reduction will be determined at the completion of the public process and will be submitted to the Governing Board for its consideration at a public hearing later in 2014.

Upcoming Proposal for Credit Generation

Proposed Rule 2511 – Credit Generation Program for Locomotive Head End Power Unit Engines and Proposed Rule 2512 – Credit Generation Program for Ocean-Going Vessels at Berth are two potential rules that could generate credits for the RECLAIM program. Proposed Rule 2511 would allow generation of emission reduction credits through the voluntary repowering of diesel-fueled auxiliary head end power generating units on passenger locomotives with cleaner engines. Proposed Rule 2512 would allow generation of emission reduction credits through the control of exhaust emissions from auxiliary engines and/or boilers used on Ocean-Going Vessels while at berth in a commercial marine port. Both of these two proposed rules are presently targeted for Governing Board consideration as part of the Rule and Control Measure Forecast for calendar year 2014, as approved by the Governing Board at the January 10, 2014 Board meeting.

RTC Price Reporting Methodology

RTC trades are reported to SCAQMD as one of two types: discrete-year RTC transactions or infinite-year block (IYB) transactions (trades that involve blocks of

RTCs with a specified start year and continuing into perpetuity). Prices for discrete-year trades are reported in terms of dollars per pound and prices for IYB trades are reported as total dollar value for total amount of IYB RTCs traded. In addition, the trading partners are required to identify any swap trades because prices reported for swap trades are based on the agreed upon value of the trade by the participants, and do not involve exchange of funds for the total value agreed upon. As such, the reported prices for swap trades may be somewhat arbitrary and are, therefore, excluded from the calculation of annual average prices. In this report, the average annual prices for discrete-year RTCs are averaged in dollars per ton of RTCs for each compliance year, while the average price for IYB RTCs are averaged as a total dollar value per ton of IYB RTCs.

Rule 2015(b)(6) specifies that, if the average annual price of discrete NOx or SOx RTCs exceeds \$15,000 per ton, the Executive Officer will conduct an evaluation and review of the compliance and enforcement aspects of RECLAIM. The Governing Board has also established average RTC price overall program review thresholds pursuant to Health and Safety Code §39616(f). Unlike the \$15,000 per ton threshold for review of the compliance and enforcement aspects of RECLAIM, these overall program review thresholds are adjusted by CPI each year. For RTC transactions occurring in calendar year 2013, the overall program review thresholds in 2013 dollars are \$40,067 per ton of discrete-year NOx RTCs, \$28,848 per ton of discrete-year SOx RTCs, \$601,010 per ton of infinite-year NOx RTCs, and \$432,727 per ton of infinite-year SOx RTCs.

RTC Trading Activity Excluding Swaps

Overall Trading Activity

The RTC market activity in calendar year 2013 was comparable to the market activity in calendar year 2012 in terms of the number of transactions. The calendar year 2013 trading activity—367 total registered trade transactions (344 NOx trades and 23 SOx trades)—was slightly higher than the number of trade transactions in calendar year 2012 (363 total registered trade transactions). These trades included discrete and IYB RTCs traded with prices, discrete and IYB RTC transfers with zero price, and discrete and IYB RTC swap trades.

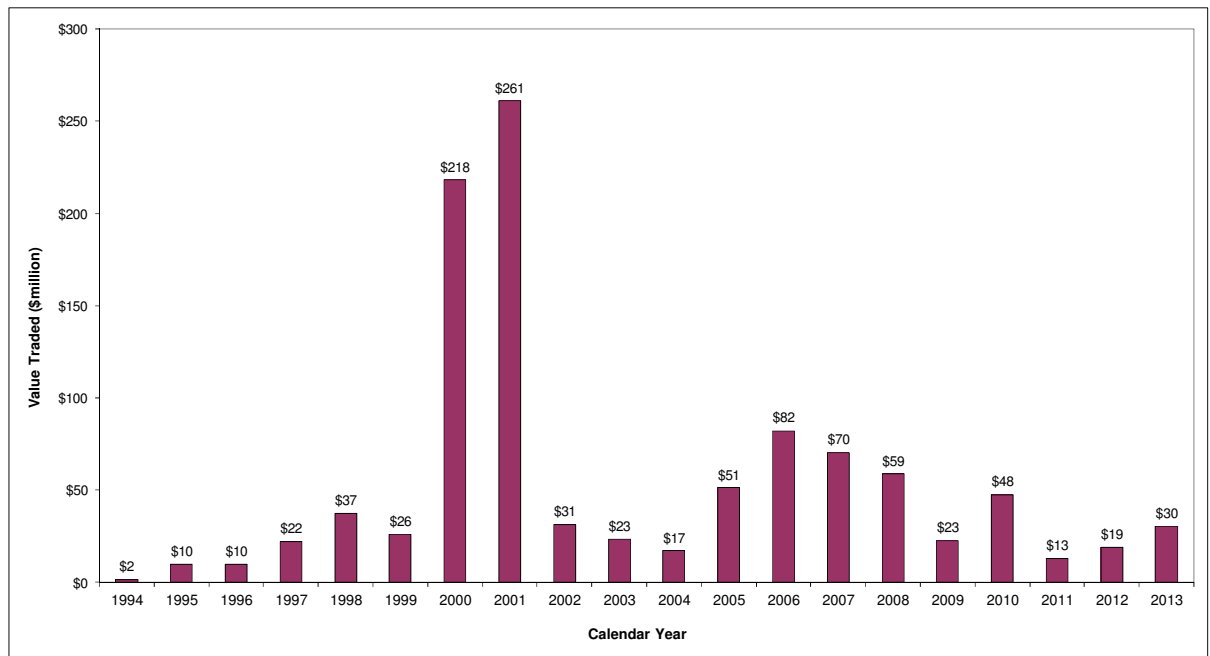
Although the number of transactions in calendar year 2013 was comparable to that in calendar year 2012, the value and volume (pounds) traded in calendar year 2013 were substantially higher (62% and 42%, respectively) than those traded in calendar year 2012. Excluding swap trades, a total value of almost \$30.4 million was traded in calendar year 2013 (\$15.9 million for NOx and \$14.5 million for SOx)—substantially higher than the total value of \$18.8 million traded in calendar year 2012 (\$4.2 million for NOx and \$14.6 million for SOx). The increase in the total value traded (also total volume) was largely due to the sale of NOx and SOx RTCs resulting from a set of changes of operator between two companies, which accounted for \$23.5 million (77.3% of the total value traded). Further details of the trades resulting from these changes of operator between two companies are presented at the end of this section. Figure 2-3 shows historical trading values (excluding swaps). Figure 2-4 summarizes overall trading activity (excluding swaps) in calendar year 2013 by pollutant.

With respect to volume traded (also excluding swap trades), 5,000 tons of discrete RTCs and 2,216 tons of IYB RTCs were traded in calendar year 2013.

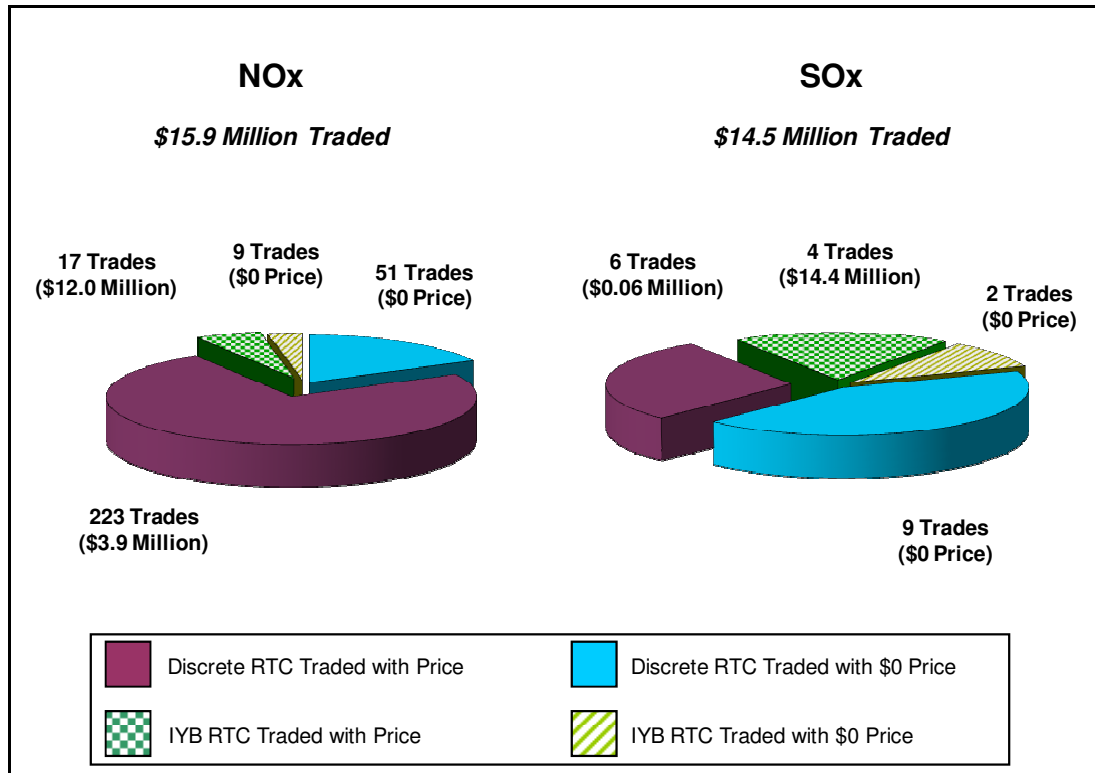
This is significantly higher than the volume traded in calendar year 2012 (4,392 tons of discrete RTCs and 700 tons of IYB RTCs). In calendar year 2013, there were 3,370 tons of discrete NOx RTCs and 83 tons of discrete SOx traded with price and 1,073 tons of discrete NOx and 474 tons of discrete SOx traded without price. In addition, there were 261 tons of IYB NOx and 79 tons of IYB SOx traded with price and, 1,518 tons of IYB NOx, and 358 tons of IYB SOx traded with zero price. Additional information on the discrete and IYB trading activities, value, and volume are discussed later in this chapter.

There were 71 trades with zero price in calendar year 2013. RTC transfers with zero price generally occur when a seller transfers or escrows RTCs to a broker pending transfer to the purchaser with price, when there is a transfer between facilities under common operator, when a facility is retiring RTCs for a settlement agreement or pursuant to variance conditions, or when there is a transfer between facilities that have gone through a change of operator. Trades with zero price also occur when the trading parties have mutual agreements where one party provides a specific service (e.g., providing steam or other process components) for the second party. In return, the second party will transfer the RTCs necessary to offset emissions generated from the service.

Figure 2-3
Annual Trading Values for NOx and SOx (Excluding Swaps)



**Figure 2-4
Calendar Year 2013 Overall Trading Activity (Excluding Swaps)**



Discrete RTC Trading Activity

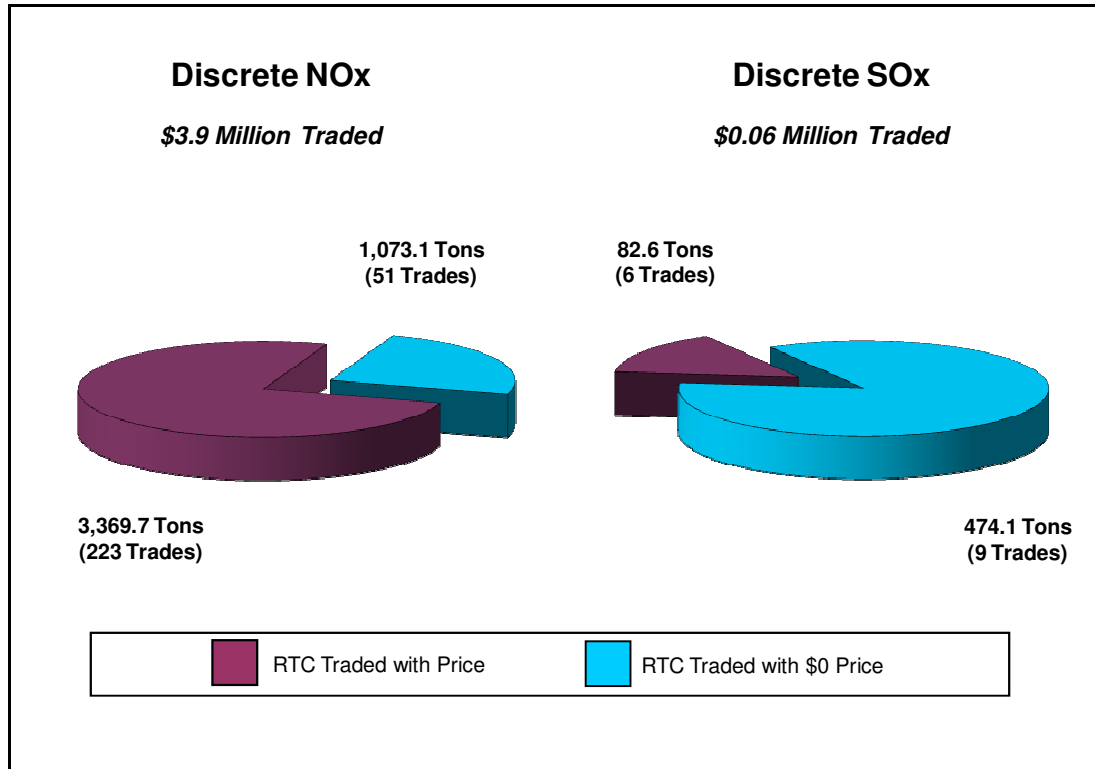
In calendar year 2013, there were a total of 274 discrete NOx RTC trades (223 trades with price and 51 trades with zero price) and 15 discrete SOx RTC trades (six trades with price and nine trades with zero price), excluding swap trades. Most of the trading of discrete NOx RTCs included RTCs for Compliance Years 2012 through 2015. There was one NOx trade that involved RTCs for Compliance Years 2016, 2017, and 2018. Most of the trading of discrete SOx RTCs included RTCs for Compliance Years 2012 and 2013. There was one SOx trade that involved RTCs for Compliance Years 2015 and 2016.

Discrete RTC trading values increased significantly in calendar year 2013. The 223 NOx trades with price totaled \$3.9 million in value. This is almost double the \$2.0 million in calendar year 2012. The six discrete SOx trades with price totaled \$0.06 million in value, which also is double the \$0.03 million traded in calendar year 2012.

The overall quantity of discrete NOx RTCs traded in calendar year 2013, 4,443 tons, increased from 3,301 tons traded in calendar year 2012. Total quantity of discrete NOx RTCs traded with price also increased to 3,370 tons in 2013 from 2,150 tons in calendar year 2012. There were a total of 1,073 tons of discrete NOx RTCs traded with zero price in 2013. The overall quantity of discrete SOx RTCs traded decreased from 1,091 tons to 557 tons. However, the quantity of discrete SOx RTCs traded with price more than doubled from 35 tons in 2012 to

83 tons in 2013. There were also 474 tons of discrete SOx RTCs trades with zero price. Figure 2-5 illustrates the trading activity of discrete RTCs (excluding swaps) for calendar year 2013.

**Figure 2-5
Calendar Year 2013 Trading Activity for Discrete RTCs (Excluding Swaps)**



IYB RTC Trading Activity

In calendar year 2013, there were 26 IYB NOx trades and six IYB SOx trades. The IYB NOx trades included Compliance Years 2012, 2013, 2014, or 2015 as the start year, while the IYB SOx trades included Compliance Years 2013 or 2014 as the start year. Of the 26 IYB NOx trades, 17 trades were with price and 9 trades with zero price. Of the six IYB SOx trades, four trades were with price and two trades were with zero price.

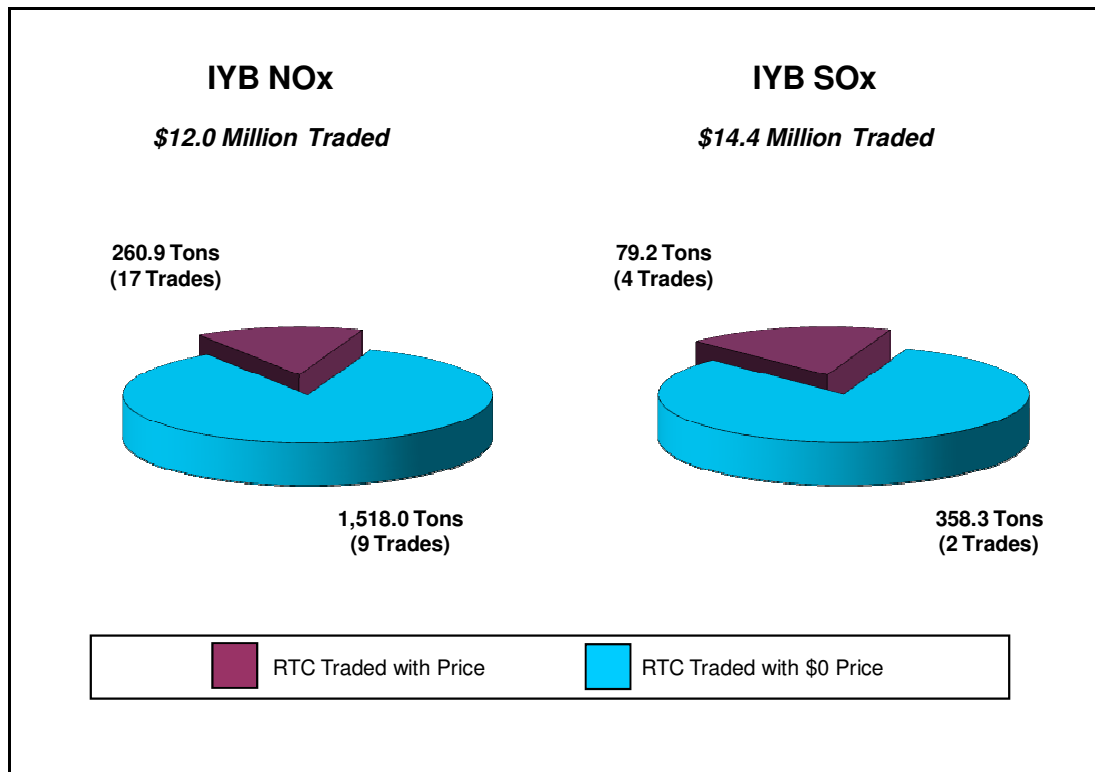
The 17 IYB NOx trades with price totaling \$12 million in calendar year 2013 were much higher than the 13 trades with price for \$2.2 million in 2012. The four IYB SOx RTC trades with price totaling \$14.4 million in calendar year 2013 were just slightly lower than the \$14.6 million traded in 2012.

The total quantity of 1,779 tons of IYB NOx traded in Calendar Year 2013 was much higher than the 131 tons traded in Calendar Year 2012. There were 261 tons of IYB NOx traded with price in calendar year 2013 compared to only 47 tons traded in calendar year 2012. The total quantity of IYB SOx traded in Calendar Year 2013 was 438 tons, which is less than the 569 tons traded in

Calendar Year 2012. The 79.2 tons of IYB SOx traded with price in 2013 also was lower than the 116 tons traded in calendar year 2012.

In addition to trades with price, there were also nine IYB NOx trades totaling 1,518 tons and two IYB SOx trades totaling 358 tons traded with zero price in calendar year 2013. Of the IYB NOx RTCs traded without price, 1,496 tons were the result of changes of operator transferring their SCAQMD issued allocations from their old operators to their new operators. All 358 tons of the IYB SOx RTCs traded without price were due to a change of operator and the associated transfer of IYB SOx RTCs that were originally issued by SCAQMD. Figure 2-6 illustrates the calendar year 2013 IYB RTC trading activity excluding swap trades.

Figure 2-6
Calendar Year 2013 Trading Activity for IYB RTCs (Excluding Swaps)



Prior to the amendment of Rule 2007 – Trading Requirements in May 2001, swap information and details of discrete and IYB trades were not required to be provided by trade participants. In compiling data for calendar years 1994 through part of 2001, any trade registration involving IYB RTCs was considered as a single IYB trade and swap trades were assumed to be nonexistent. Trading activity since inception of the RECLAIM program is illustrated in Figures 2-7 through 2-10 (discrete NOx trades, discrete SOx trades, IYB NOx trades, and IYB SOx trades, respectively) based on the trade reporting methodology described earlier in this report.

As mentioned in the beginning of this section, there was a set of changes of operator between two companies in 2013. These changes resulted in significant amounts of RTCs transferred between these two companies both with and without prices and were the main cause in the increased trading activity in 2013. Some of the transfers of RTCs resulting from these changes of operator occurred with price and the others were with \$0 price. The transfers with \$0 included only RTCs that were originally issued to the facilities by SCAQMD and included 468 tons of discrete NOx RTCs, 128 tons of discrete SOx RTCs, 771 tons of IYB NOx RTCs and 358 tons of IYB SOx RTCs. The other transfers included RTCs that were previously purchased from other sources by the previous operator and included 48 tons of discrete year SOx RTCs (58% of total volume of discrete SOx RTCs traded with price), 202 tons of IYB NOx RTCs (77% of total volume of IYB NOx RTCs traded with price) and 78.7 tons of IYB SOx RTCs (99% of total volume of IYB SOx RTCs traded with price). These transfers totaled \$0.04 million for the discrete year SOx RTCs (67% of total value discrete SOx RTCs traded), \$9.2 million for the NOx IYB RTCs (77% of total value of NOx IYB RTCs traded) and \$14.3 million for the IYB SOx RTCs (84% of total value of SOx IYB RTCs traded).

Figure 2-7
Discrete NOx RTC Trades (Excluding Swaps)

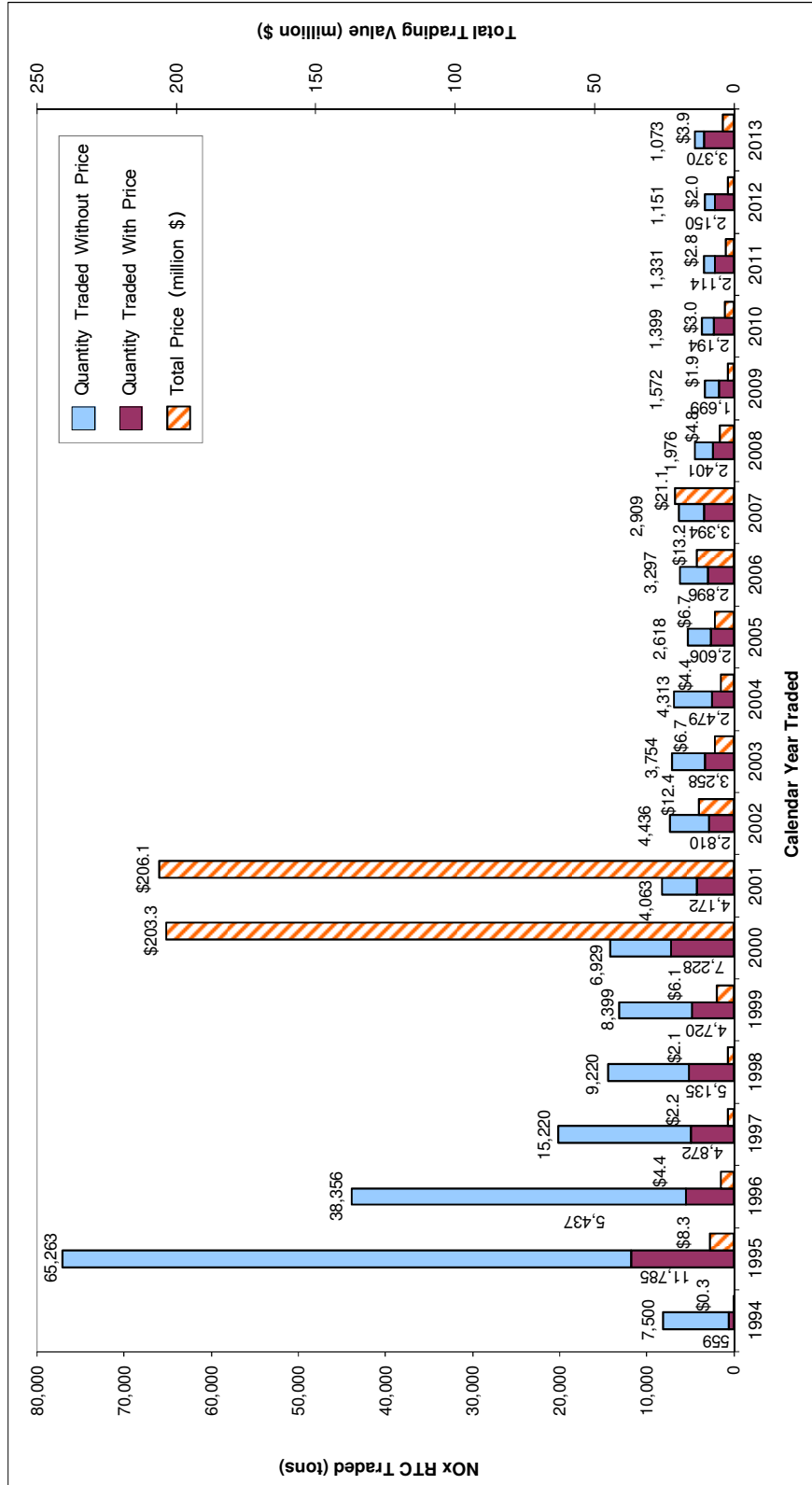


Figure 2-8
Discrete SOx RTC Trades (Excluding Swaps)

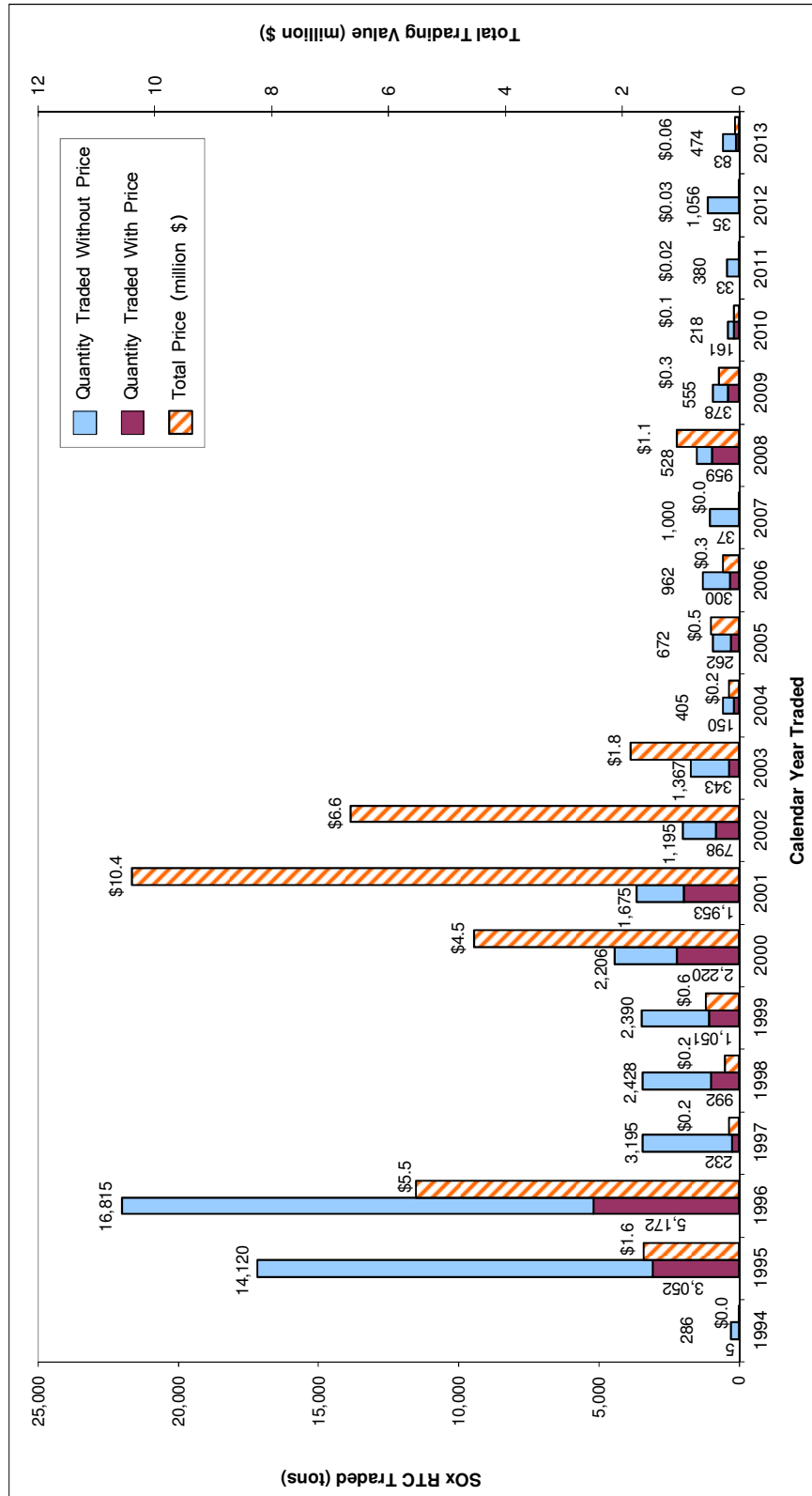


Figure 2-9
IYB NOx RTC Trades (Excluding Swaps)

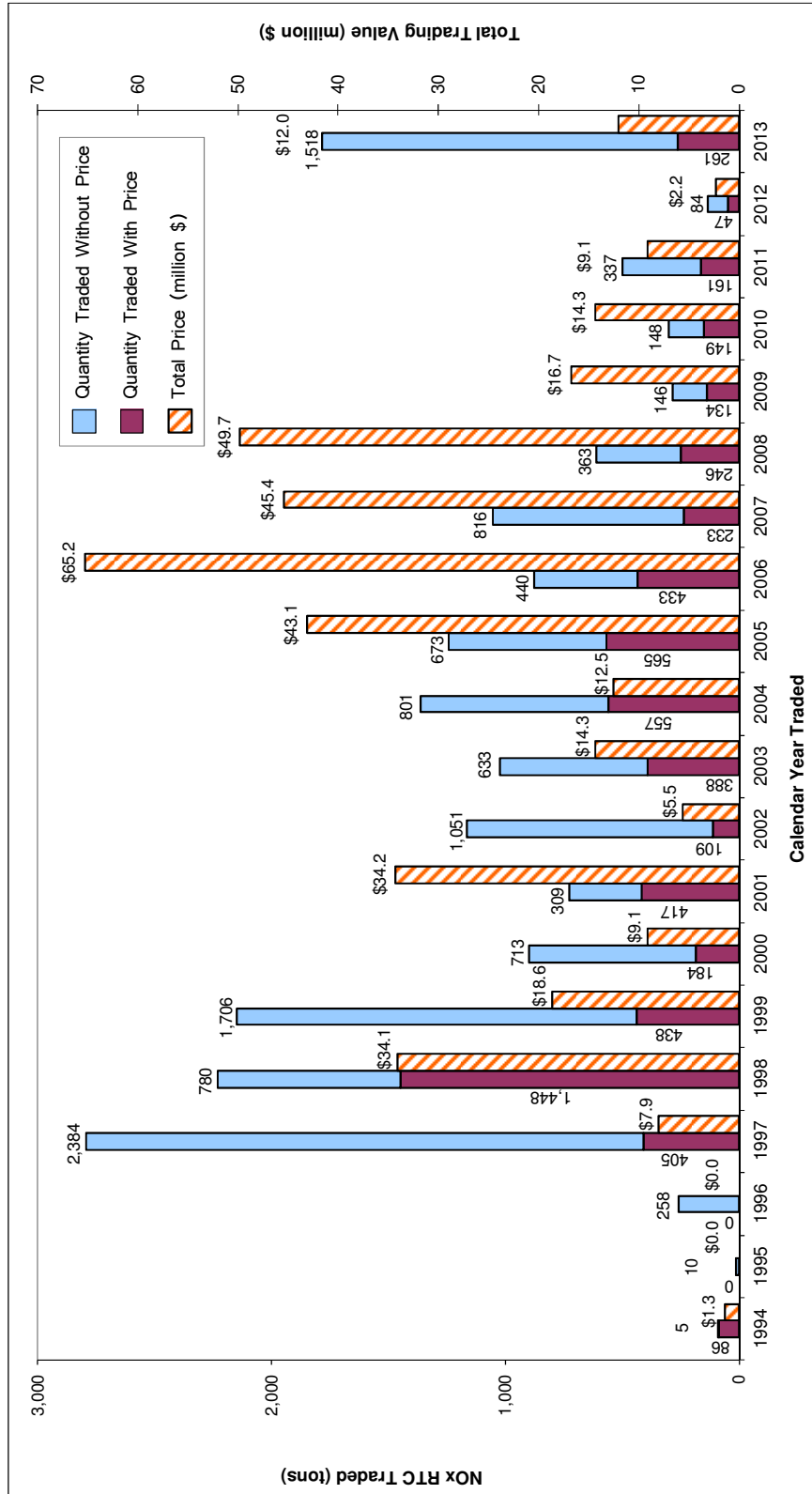
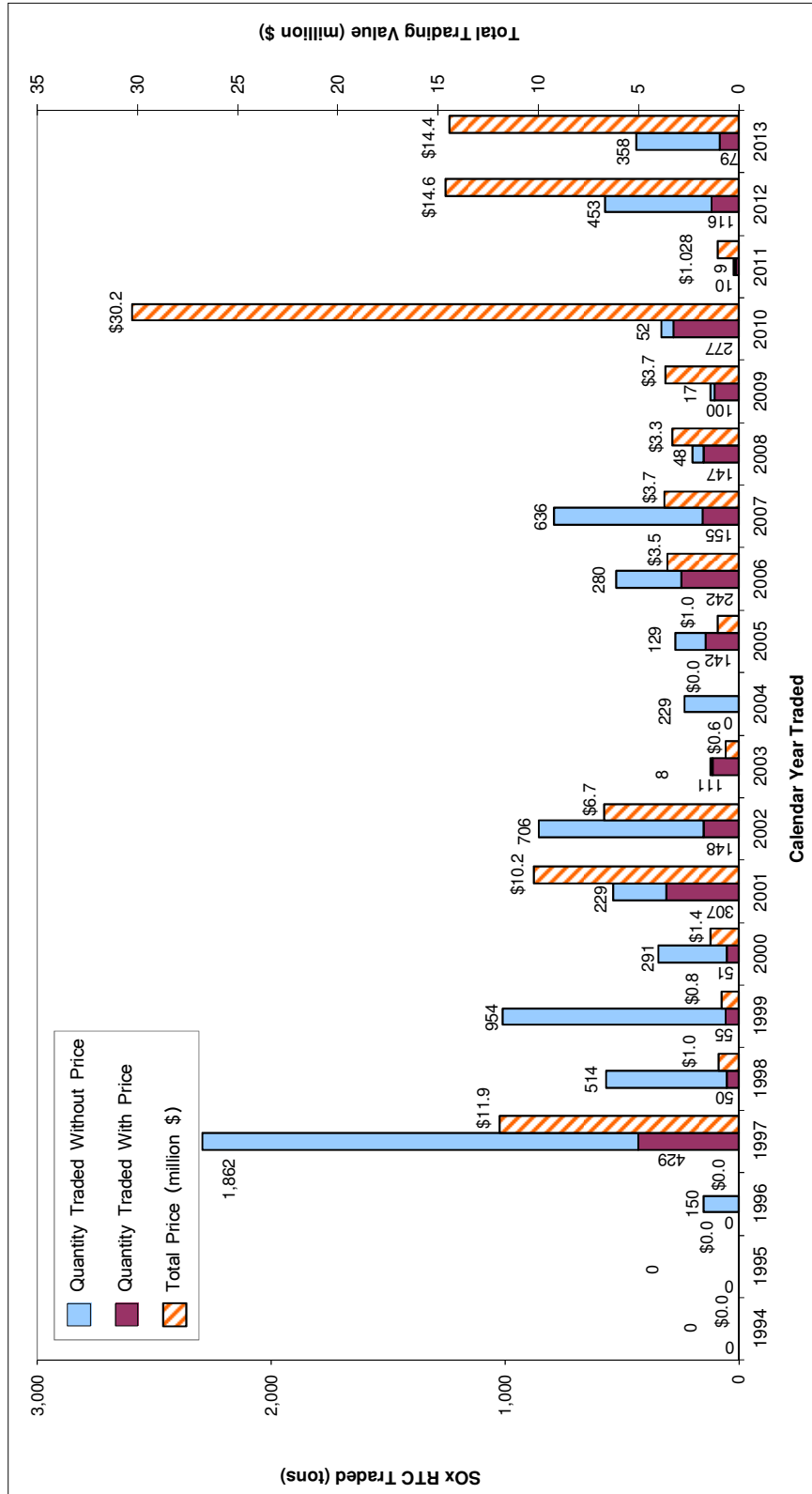


Figure 2-10
IYB SOx RTC Trades (Excluding Swaps)



Swap Trades

In addition to traditional trades of RTCs for a price, RTC swaps also occurred between trading partners. There were swaps of RTCs with different zones, cycles, expiration years, and pollutants. In some cases, swaps involved a combination of RTCs and cash payment as a premium. Trading parties swapping RTCs were required to report the agreed upon price of RTCs for each trade even though, with the exception of the above-described premiums, no money was actually exchanged. Over \$2.74 million in total value was reported from RTCs that were swapped in calendar year 2013. The swap values are based on the prices reported on the RTC trade registrations. Since RTC swap trades occur when two trading partners exchange RTCs, values reported on both trades involved in the exchange are included in the calculation of the total value reported. However, in cases where commodities other than RTCs are involved in the swap, these commodity values are not included in the above reported total value (*e.g.*, in the case of a swap of NO_x RTCs valued at \$10,000 for another set of RTCs valued at \$8,000 together with a premium of \$2,000, the value of such a swap would have been reported at \$18,000 in Table 2-2).

For calendar years that have swap transactions with large values (*e.g.*, 2009) the inclusion of swap transactions in the average trade price calculations would have resulted in calculated average annual prices dominated by swap transactions, and therefore, may not be representative of market prices actually paid for RTCs. Prices of swap trades are excluded from analysis of average trade prices because the values of the swap trades are solely based upon prices agreed upon between trading partners and do not reflect actual funds transferred. Tables 2-2 and 2-3 present the calendar years 2001 through 2013 RTC swaps for NO_x and SO_x, respectively.

Table 2-2
NOx Registrations Involving Swaps*

| Year | Total Value (\$ millions) | IYB RTC Swapped with Price (tons) | Discrete RTC Swapped with Price (tons) | Number of Swap Registrations with Price | Total Number of Swap Registrations |
|------|---------------------------|-----------------------------------|--|---|------------------------------------|
| 2001 | \$24.29 | 6.0 | 612.2 | 71 | 78 |
| 2002 | \$14.31 | 64.3 | 1,701.7 | 94 | 94 |
| 2003 | \$7.70 | 69.9 | 1,198.1 | 64 | 64 |
| 2004 | \$3.74 | 0 | 1,730.5 | 90 | 90 |
| 2005 | \$3.89 | 18.7 | 885.3 | 53 | 53 |
| 2006 | \$7.29 | 14.8 | 1,105.9 | 49 | 49 |
| 2007 | \$4.14 | 0 | 820.0 | 43 | 49 |
| 2008 | \$8.41 | 4.5 | 1,945.8 | 48 | 50 |
| 2009 | \$55.76 | 394.2 | 1,188.4 | 37 | 42 |
| 2010 | \$3.73 | 18.2 | 928.5 | 25 | 31 |
| 2011 | \$2.00 | 0 | 775.5 | 25 | 32 |
| 2012 | \$1.29 | 0 | 928.1 | 36 | 36 |
| 2013 | \$2.41 | 11.6 | 1,273.5 | 44 | 44 |

* There are swaps that are without price. Swaps without price are strictly transfers of RTCs between trading partners and their respective brokers. Information regarding swap trades was not required prior to May 9, 2001.

Table 2-3
SOx Registrations Involving Swaps*

| Year | Total Value (\$ millions) | IYB RTC Swapped with Price (tons) | Discrete RTC Swapped with Price (tons) | Number of Swap Registrations with Price | Total Number of Swap Registrations |
|------|---------------------------|-----------------------------------|--|---|------------------------------------|
| 2001 | \$1.53 | 18.0 | 240.0 | 3 | 4 |
| 2002 | \$6.11 | 26.6 | 408.4 | 30 | 30 |
| 2003 | \$5.88 | 20.9 | 656.0 | 32 | 32 |
| 2004 | \$0.39 | 0 | 161.8 | 13 | 13 |
| 2005 | \$2.16 | 43.5 | 227.8 | 13 | 14 |
| 2006 | \$0.02 | 0 | 24.4 | 2 | 2 |
| 2007 | \$0.00 | 0 | 0 | 0 | 0 |
| 2008 | \$0.40 | 0 | 197.0 | 5 | 8 |
| 2009 | \$3.63 | 55.3 | 401.3 | 9 | 10 |
| 2010 | \$6.89 | 79.4 | 417.0 | 16 | 18 |
| 2011 | \$0.25 | 0 | 228.5 | 3 | 4 |
| 2012 | \$27.01 | 100.0 | 7.5 | 4 | 4 |
| 2013 | \$0.33 | 3.1 | 5.5 | 2 | 2 |

* There are swaps that are without price. Swaps without price are strictly transfers of RTCs between trading partners and their respective brokers. Information regarding swap trades was not required prior to May 9, 2001.

RTC Trade Prices

Discrete-Year RTC Prices

In calendar year 2013, the average annual prices for discrete-year NO_x RTCs were \$549 per ton for Compliance Year 2012, \$1,080 per ton for Compliance Year 2013 RTCs, and \$1,881 per ton for Compliance Year 2014. The highest NO_x average price was \$3,800 per ton for Compliance Year 2018 RTCs. There was only one trade that involved discrete-year NO_x RTCs for Compliance Years 2016, 2017, and 2018.

The average annual prices for discrete-year SO_x RTCs were \$291 per ton for Compliance Year 2012, \$485 per ton for Compliance Year 2013, and \$900 per ton for Compliance Years 2015 and 2016². There was only one trade that involved discrete-year SO_x RTCs for Compliance Years 2015 and 2016 and this trade was also associated with the change of operator. The \$485 per ton for Compliance Year 2013 SO_x RTCs traded in calendar year 2013 is less than the corresponding \$759 per ton Compliance Year 2012 SO_x RTCs traded in calendar year 2012. These discrete-year SO_x RTCs average prices are based on only three trades for each of these calendar years. Averages based on such small populations are expected to be highly variable.

Figures 2-11 and 2-12 present the average annual prices for discrete-year NO_x and SO_x RTCs during calendar years 2005 through 2013, respectively. Note that prices for a Compliance Year's RTCs may also be shown for the calendar year after those RTCs expired, since the average price for each compliance year is based on sales of both Cycle 1 RTCs expiring in December of that year, as well as Cycle 2 RTCs expiring in June of the following year. Furthermore, Cycle 1 RTCs expiring in December may be traded during the 60-day reconciliation period following the expiration date, which extends into the next calendar year.

Average annual prices in calendar year 2013 for discrete NO_x and SO_x RTCs for all compliance years remained well below the \$15,000 per ton threshold to evaluate and review the compliance aspects of the program set forth by SCAQMD Rule 2015, as well as the \$40,067 per ton of NO_x and \$28,848 per ton of SO_x discrete RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f).

² There were no discrete-year SO_x RTCs for Compliance Year 2014 traded in calendar year 2013.

Figure 2-11
Average Annual Prices for Discrete-Year NOx RTCs during Calendar Years 2005 through 2013

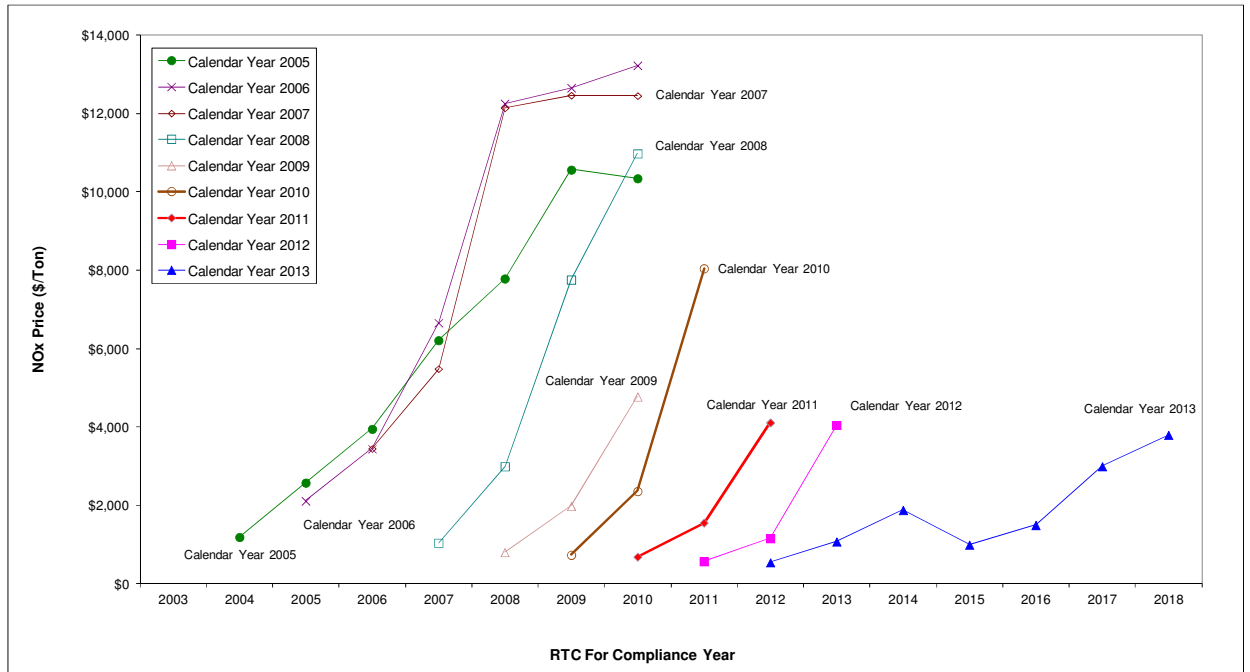
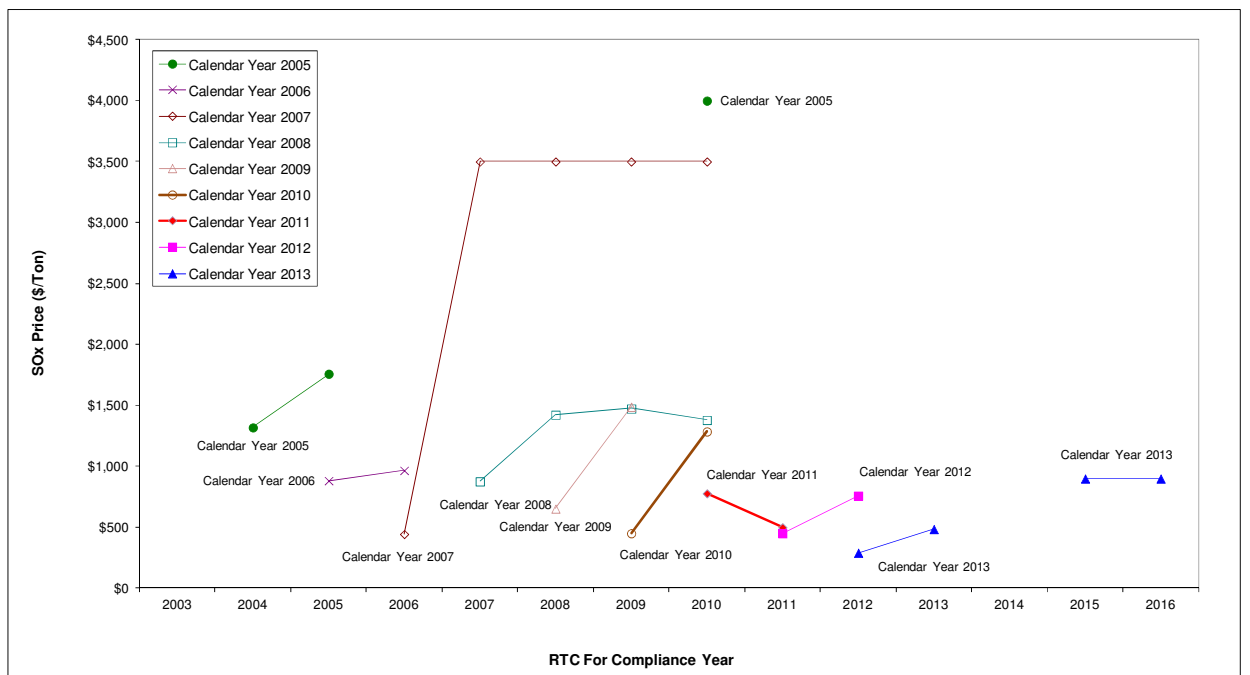


Figure 2-12
Average Annual Prices for Discrete-Year SOx RTCs during Calendar Years 2005 through 2013



Twelve-Month Rolling Average Prices of Compliance Year 2012 NOx RTCs

The January 2005 RECLAIM amendments directed the Executive Officer to calculate the 12-month rolling average price of NOx RTCs (“rolling average price”) “for all trades for the current compliance year” excluding “RTC transactions reported at no price.” Swap transactions are also excluded from the calculation of rolling average prices.

In the event that the rolling average price exceeds \$15,000 per ton, the Executive Officer is required to report the rolling average price to the Governing Board. If the Governing Board determines that the rolling average price exceeds \$15,000 per ton, SCAQMD is required to review the compliance aspects of the RECLAIM program. In its resolution amending Rule 2002(f) on January 7, 2005, the Governing Board directed the Executive Officer to report the NOx RTC 12-month rolling average price data to the Stationary Source Committee (SSC) at least quarterly. Accordingly, such reports have been prepared by SCAQMD staff and submitted to the SSC on a quarterly basis. To date, the twelve-month rolling average prices have been far below and have not exceeded the \$15,000 per ton threshold. Staff continues to monitor the twelve-month rolling average price of current-year NOx RTCs on a monthly basis and report the rolling average prices to the Stationary Source Committee on a quarterly basis.

As shown in Table 2-4, the twelve-month rolling average prices of Compliance Year 2013 NOx RTCs have generally been flat or declining since January 2013 and have not exceeded the \$15,000 per ton threshold specified in Rule 2002(f). Therefore, it was not necessary for the Executive Officer to report the rolling average price to the Governing Board or for the Governing Board to require a compliance audit. For Compliance Year 2012 NOx RTCs, the same findings were true and were included in the RECLAIM Annual Audit Report for 2011 Compliance Year, submitted to the Governing Board in March 2013.

Table 2-4
Twelve-Month Rolling Average Prices of Compliance Year 2013 NOx RTCs

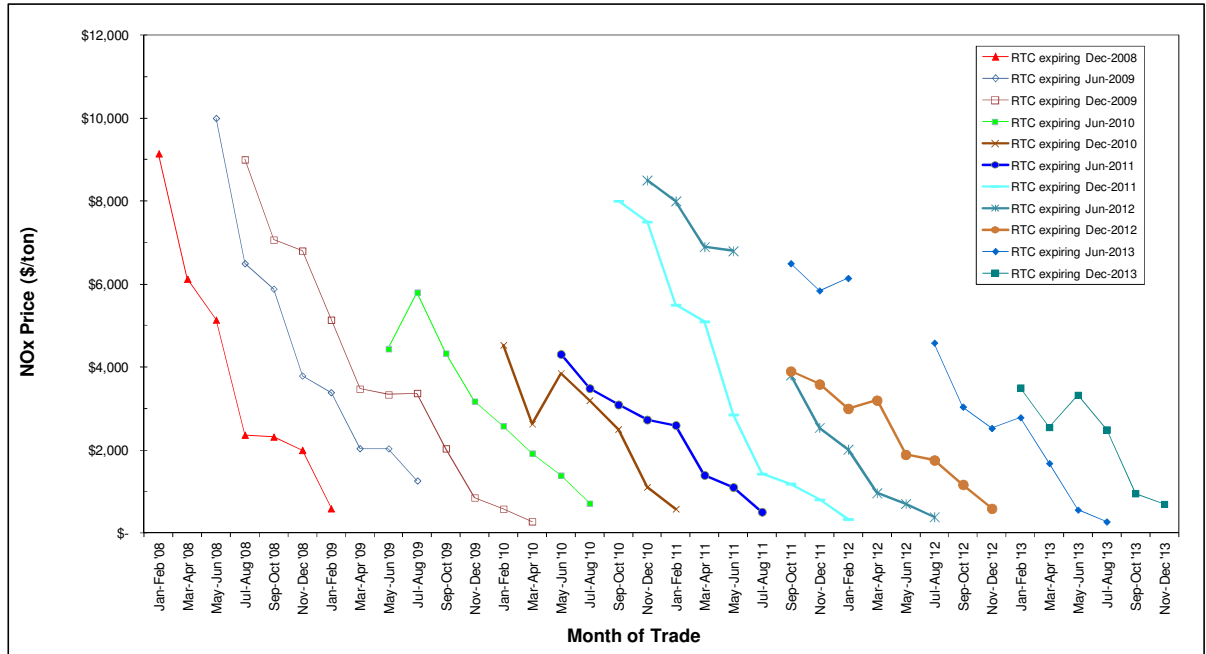
| Reporting Month | 12-Month Period | Average Price (\$/ton) |
|-----------------|-------------------------------------|------------------------|
| January 2013 | January through December 2012 | \$4,053 |
| February 2013 | February 2012 through January 2013 | \$4,044 |
| March 2013 | March 2012 through February 2013 | \$4,044 |
| April 2013 | April 2012 through March 2013 | \$4,042 |
| May 2013 | May 2012 through April 2013 | \$3,765 |
| June 2013 | June 2012 through May 2013 | \$3,765 |
| July 2013 | July 2012 through June 2013 | \$3,758 |
| August 2013 | August 2012 through July 2013 | \$3,665 |
| September 2013 | September 2012 through August 2013 | \$3,643 |
| October 2013 | October 2012 through September 2013 | \$1,849 |
| November 2013 | November 2012 through October 2013 | \$1,522 |
| December 2013 | December 2012 through November 2013 | \$1,444 |
| January 2014 | January through December 2013 | \$1,080 |

Average Price for NOx RTCs Nearing Expiration

Generally, RTC prices decrease as their expiration dates approach and during the sixty days after their expiration dates during which they can be traded. RTC prices are usually lowest during the 60 day-period following their expiration date during which facilities are allowed to trade and obtain RTCs to cover their emissions. This general trend has been repeated every year since 1994 except for Compliance Years 2000 and 2001 (during the California energy crisis), when NOx RTC prices increased as the expiration dates approached because the power plants' NOx emissions increased significantly and there was a shortage of NOx RTCs. Prices for NOx RTCs that expired in calendar year 2013 followed the general trend of RTC prices declining over the course of the Compliance Year and the sixty-day trading period thereafter.

The bi-monthly average price for these near-expiration NOx RTCs is shown in Figure 2-13 to illustrate the general price trend for these RTCs. The general declining trend of RTC prices nearing and just past expiration indicates that there was an adequate supply to meet RTC demand during the final reconciliation period following the end of the compliance years. A similar analysis is not performed for the price of SOx RTCs nearing expiration because there are not enough SOx trades over the course of the year to yield meaningful data, however SOx RTC prices have generally followed the same trends.

Figure 2-13
Bi-Monthly Average Price for NOx RTCs near Expiration



Note: Data is presented for a limited number of RTC expiration dates for graphical clarity.

IYB RTC Prices

The average annual price for IYB NOx RTCs traded in calendar year 2013 is \$45,914 per ton, which is lower than the average annual price of \$48,146 per ton traded in calendar year 2012. The average annual price for IYB SOx RTCs traded in calendar year 2013 is \$181,653 per ton, which is higher than the \$125,860 per ton traded in calendar year 2012. There were only four IYB SOx trades with price totaling 79 tons in 2013, which is lower than the 116 tons traded in 2012. However, the IYB SOx RTC average price was dominated by one IYB SOx trade resulting from a change of operator that accounted for over 99% of the trading volume. Data regarding IYB RTCs traded with price (excluding swap trades) for NOx and SOx RTCs and their average annual prices since 1994 are summarized in Tables 2-5 and 2-6, respectively. In calendar year 2013, the average annual IYB RTC prices did not exceed the \$601,010 per ton of NOx RTCs or the \$432,727 per ton of SOx RTCs program review thresholds established by the Governing Board pursuant to California Health and Safety Code §39616(f).

Table 2-5
IYB NOx Pricing (Excluding Swaps)

| Calendar Year | Total Reported Value (\$ millions) | IYB RTC Traded with Price (tons) | Number of IYB Registrations With Price | Average Price (\$/ton) |
|---------------|------------------------------------|----------------------------------|--|------------------------|
| 1994* | \$1.3 | 85.7 | 1 | \$15,623 |
| 1995* | \$0.0 | 0 | 0 | N/A |
| 1996* | \$0.0 | 0 | 0 | N/A |
| 1997* | \$7.9 | 404.6 | 9 | \$19,602 |
| 1998* | \$34.1 | 1,447.6 | 23 | \$23,534 |
| 1999* | \$18.6 | 438.3 | 19 | \$42,437 |
| 2000* | \$9.1 | 184.2 | 15 | \$49,340 |
| 2001* | \$34.2 | 416.9 | 25 | \$82,013 |
| 2002 | \$5.5 | 109.5 | 31 | \$50,686 |
| 2003 | \$14.3 | 388.3 | 28 | \$36,797 |
| 2004 | \$12.5 | 557.0 | 52 | \$22,481 |
| 2005 | \$43.1 | 565.3 | 71 | \$76,197 |
| 2006 | \$65.2 | 432.9 | 50 | \$150,665 |
| 2007 | \$45.4 | 233.5 | 25 | \$194,369 |
| 2008 | \$49.7 | 245.6 | 27 | \$202,402 |
| 2009 | \$16.7 | 134.2 | 14 | \$124,576 |
| 2010 | \$14.3 | 149.0 | 13 | \$95,761 |
| 2011 | \$9.1 | 160.7 | 29 | \$56,708 |
| 2012 | \$2.2 | 46.6 | 13 | \$48,146 |
| 2013 | \$12.0 | 260.9 | 17 | \$45,914 |

* No information regarding swap trades was reported until May 9, 2001.

Table 2-6
IYB SOx Pricing (Excluding Swaps)

| Calendar Year | Total Reported Value (\$ millions) | IYB RTC Traded with Price (tons) | Number of IYB Registrations With Price | Average Price (\$/ton) |
|---------------|------------------------------------|----------------------------------|--|------------------------|
| 1994* | \$0.0 | 0 | 0 | N/A |
| 1995* | \$0.0 | 0 | 0 | N/A |
| 1996* | \$0.0 | 0 | 0 | N/A |
| 1997* | \$11.9 | 429.2 | 7 | \$27,738 |
| 1998* | \$1.0 | 50.0 | 1 | \$19,360 |
| 1999* | \$0.8 | 55.0 | 3 | \$14,946 |
| 2000* | \$1.4 | 50.6 | 5 | \$27,028 |
| 2001* | \$10.2 | 306.8 | 8 | \$33,288 |
| 2002 | \$6.7 | 147.5 | 5 | \$45,343 |
| 2003 | \$0.6 | 110.9 | 1 | \$5,680 |
| 2004 | \$0.0 | 0.0 | 0 | N/A |
| 2005 | \$1.0 | 141.5 | 3 | \$7,409 |
| 2006 | \$3.5 | 241.7 | 12 | \$14,585 |
| 2007 | \$3.7 | 155.2 | 5 | \$23,848 |
| 2008 | \$3.3 | 146.8 | 5 | \$22,479 |
| 2009 | \$3.7 | 100.0 | 4 | \$36,550 |
| 2010 | \$30.2 | 277.0 | 10 | \$109,219 |
| 2011 | \$1.03 | 10.0 | 2 | \$102,366 |
| 2012 | \$14.6 | 116.2 | 4 | \$125,860 |
| 2013 | \$14.4 | 79.2 | 4 | \$181,653 |

* No information regarding swap trades was reported until May 9, 2001.

Market Participants

RECLAIM market participants have traditionally included RECLAIM facilities, brokers, commodity traders, and private investors. Starting in calendar year 2004, mutual funds joined the traditional participants in RTC trades. Market participation expanded further in 2006, when foreign investors started participating in RTC trades. However, foreign investors have not participated in any RTC trades since calendar year 2008 and foreign investors do not hold any current or future RTCs at this time.

RECLAIM facilities are the original sources and users of RTCs. They usually sell their surplus RTCs by the end of the compliance year or when they have a long-term decrease in emissions. Brokers match buyers and sellers, and usually do not purchase or own RTCs. Commodity traders and private investors actually invest in and own RTCs in order to seek profits by trading them. For discussion in this report, "investors" include all parties who hold RTCs other than RECLAIM facility permit holders and brokers.

Investor Participation

Investors were involved in 133 of the 223 discrete NOx RTC trades with price, one of the six discrete SOx RTC trades with price, 16 of the 17 IYB NOx trades with price and three of the four IYB SOx trades with price in calendar year 2013.

Investors' involvement in discrete NOx and SOx trades registered with price in calendar year 2013 is illustrated in Figures 2-14 and 2-15. Figure 2-14 is based on total value of discrete NOx and SOx RTCs traded, and shows that investors were involved in 31% and 0.5%, respectively, of the NOx and SOx trades reported by value. Figure 2-15 is based on discrete volume traded with price and shows that investors were involved in 44% and 0.5% of the NOx and SOx trades by volume, respectively. Figures 2-16 and 2-17 provide similar data for both IYB NOx and SOx trades, and show that investors were involved in 23% of IYB NOx trades and 0.4% of IYB SOx trades on a reported value basis, and 22% of IYB NOx and 0.6% of IYB SOx trades on the basis of the number of pounds traded with price. These involvement figures are relatively low when compared to investor involved trades in calendar year 2012.

Figure 2-14
Calendar Year 2013 Investor-Involved Discrete NOx and SOx Trades Based on Value Traded

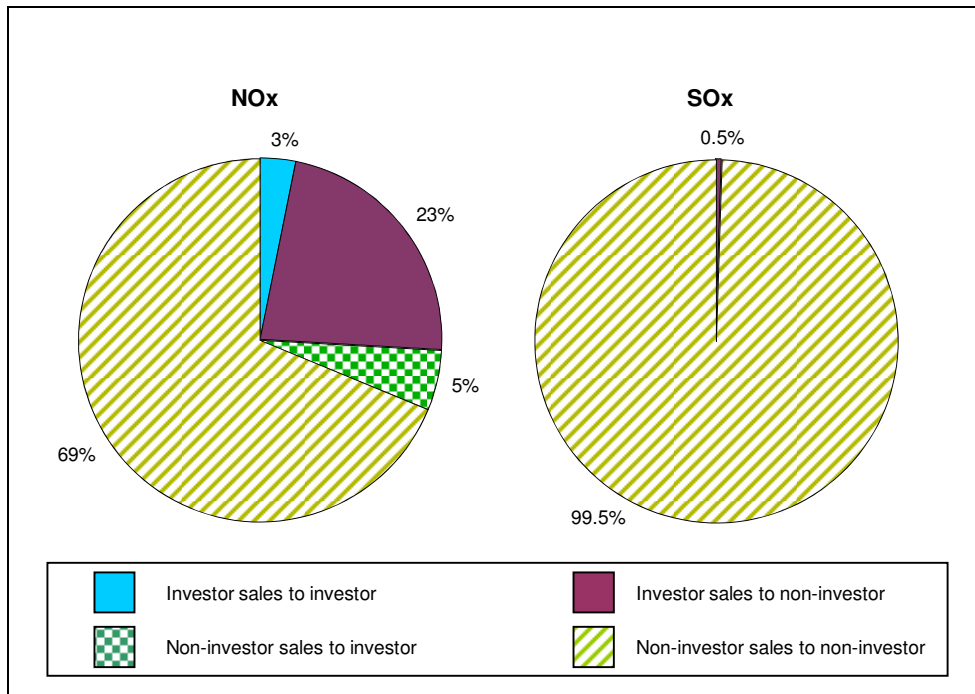


Figure 2-15
Calendar Year 2013 Investor-Involved Discrete NOx and SOx Trades Based on Volume Traded with Price

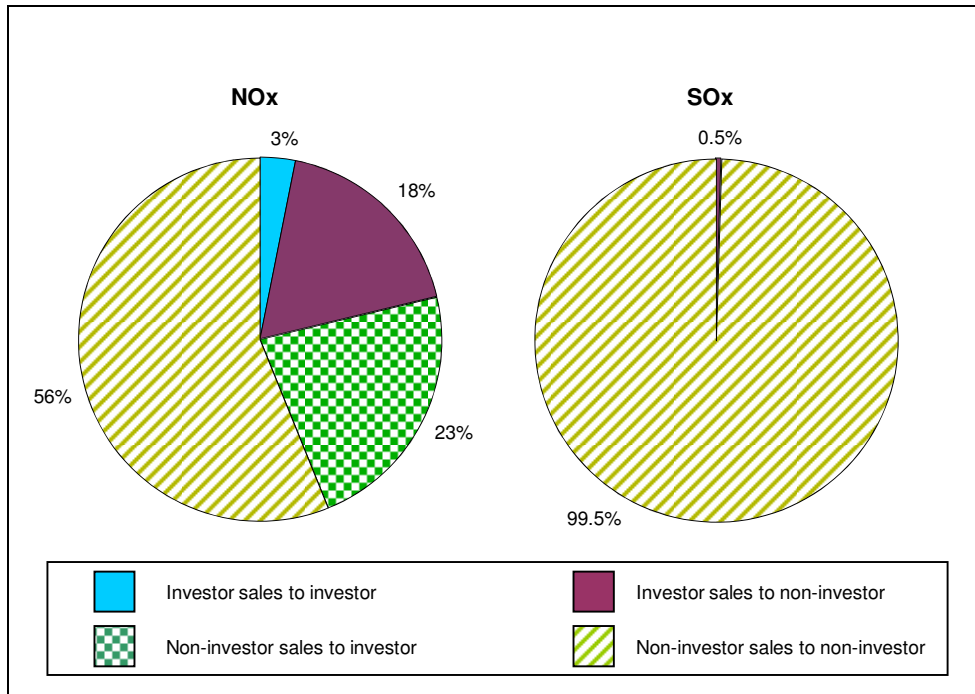


Figure 2-16
Calendar Year 2013 Investor-Involved IYB NOx and SOx Trades Based on Value Traded

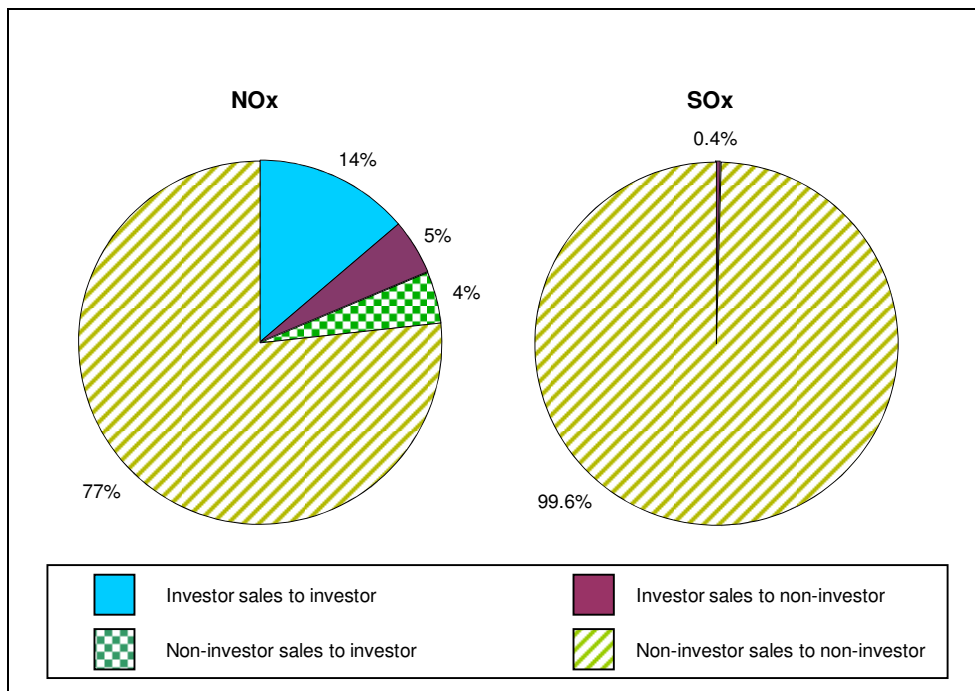
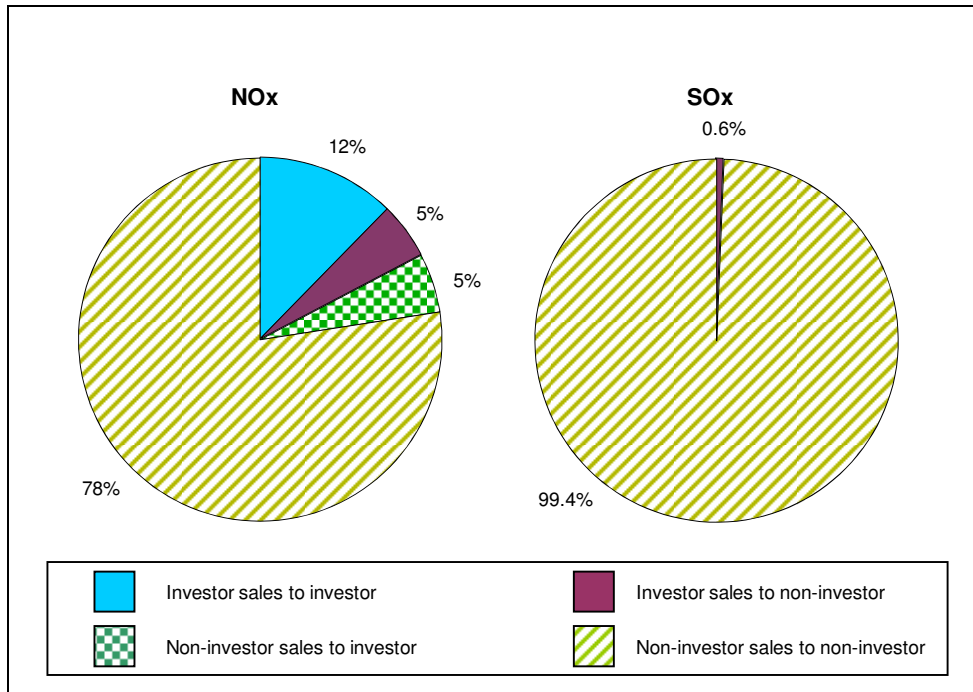


Figure 2-17
Calendar Year 2013 Investor-Involved IYB NOx and SOx Trades Based on Volume Traded with Price



As mentioned in previous sections, there were RTC transfers due to changes of operator between two companies in calendar 2013. The amount of RTCs traded with price as a result of the changes of operator were significant and skewed the above percentages to show a lower investor participation rate, especially in IYB RTC trades. These transfers were the result of RECLAIM facilities changing hands and not influenced by RTC market activities. As such, Figures 2-18 through 2-21 are presented to show investor participation rates after removing these trades in the same manner as in Figures 2-14 through 2-17, respectively. Figures 2-14, 2-15, 2-18, and 2-19 together show that investor involvement in discrete-year RTC trades was appreciably less in calendar year 2013 than it has been in recent years, even with the effect of the change of operator removed. However, investor involvement in IYB RTC trades is still significant (100% in both NOx and SOx IYB RTC trades) when the effect of the change of operator is removed.

Figure 2-18
Calendar Year 2013 Investor-Involved Discrete NOx and SOx Trades Based on Value Traded (with trades resulting from change of operator removed)

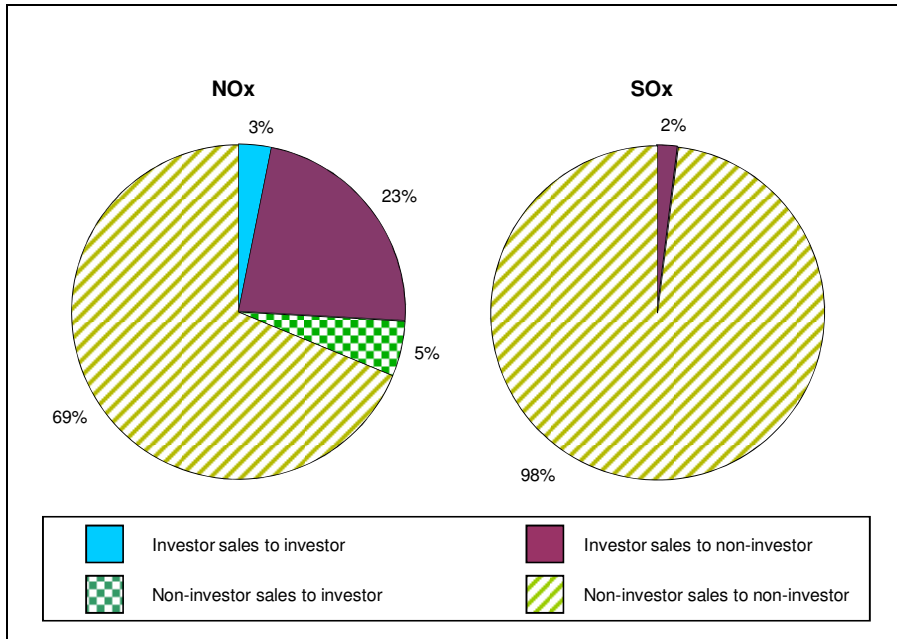


Figure 2-19
Calendar Year 2013 Investor-Involved Discrete NOx and SOx Trades Based on Volume Traded with Price (with trades resulting from change of operator removed)

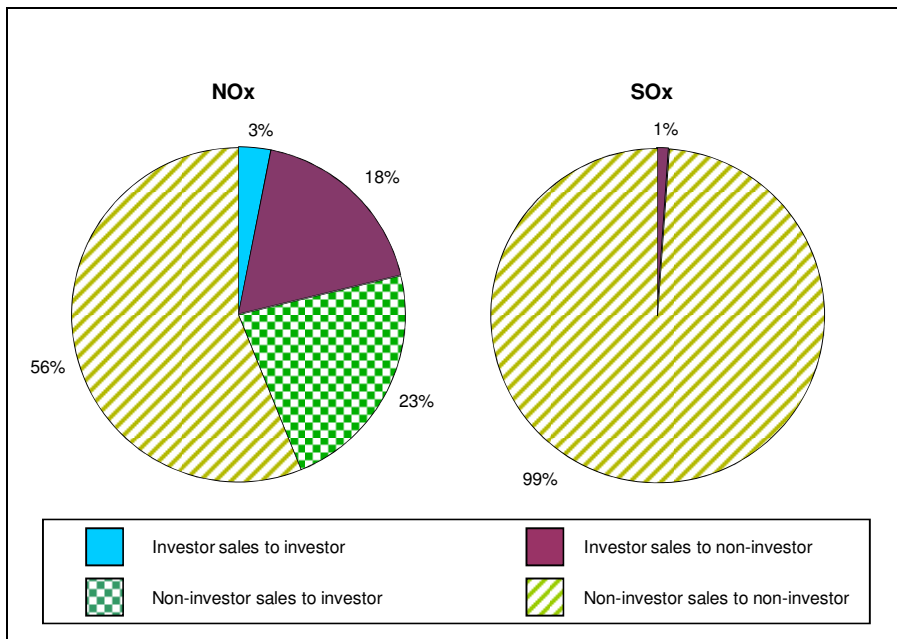


Figure 2-20
Calendar Year 2013 Investor-Involved IYB NOx and SOx Trades Based on Value Traded (with trades resulting from change of operator removed)

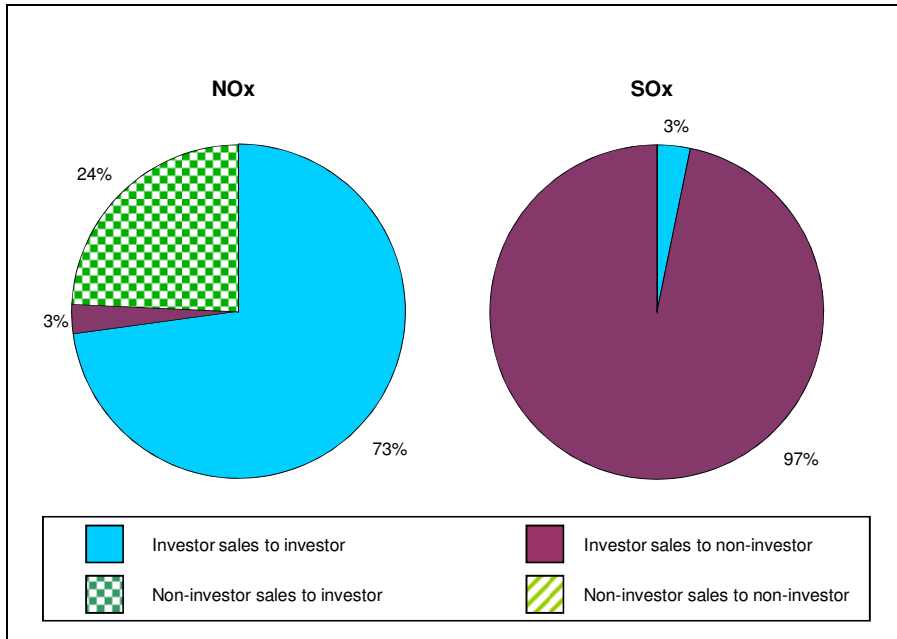
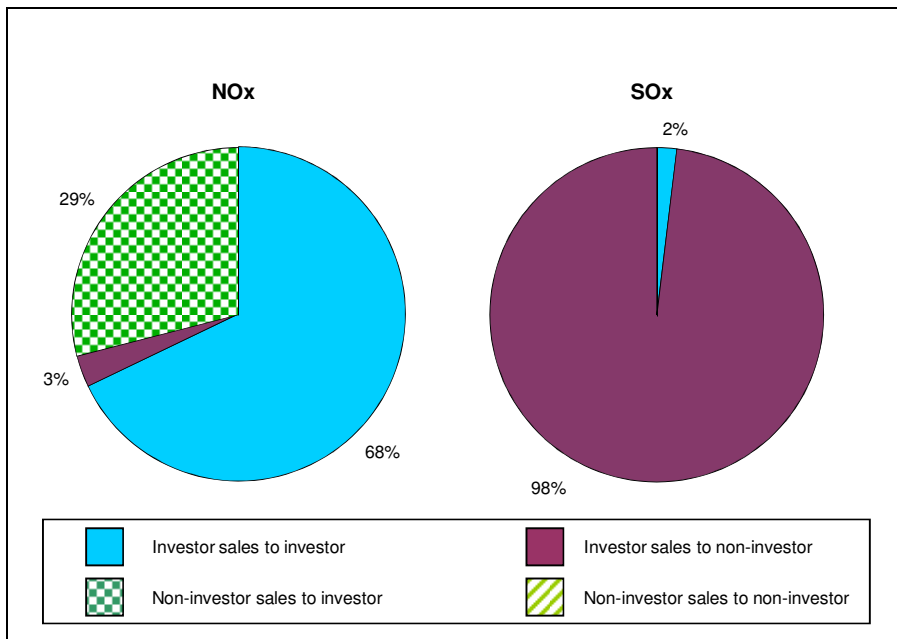


Figure 2-21
Calendar Year 2013 Investor-Involved IYB NOx and SOx Trades Based on Volume Traded with Price (with trades resulting from change of operator removed)



As of the end of calendar year 2013, investors' holding of IYB NOx RTCs was unchanged at 4.9% compared to the end of calendar year 2012. Mutual fund investors hold 2.7% of all IYB NOx RTCs, down from 3.2% at the end of calendar year 2012. Investors slightly increased their holding of IYB SOx RTCs to 0.9% at the end of calendar year 2013 from 0.7% at the end of calendar year 2012. No IYB SOx RTCs are currently held by mutual fund investors.

The supply of IYB RTCs available for sale has been mainly from facilities that have permanently shut down or that were in the process of doing so. There were five RECLAIM facilities that shut down during Compliance Year 2012 (refer to Chapter 1). One of the five facilities participated in both the NOx and SOx RECLAIM program. This facility did not hold any IYB NOx or IYB SOx RTCs. The remaining four NOx-only facilities held a total of 8.4 tons of IYB NOx RTCs. Of this amount, 2.4 tons of IYB NOx RTCs were sold to investors, 4.7 tons of IYB NOx RTCs were sold to non-investors, and the remaining 1.3 tons of IYB NOx RTCs have not been sold or transferred. Note that the majority of these sales occurred prior to calendar year 2013, as facilities often decrease production in years prior to shutting down.

Investor Impacts on RTC Market

Theoretically, the role of investors in this market is to provide capital for installing air pollution control equipment that costs less than the market value of credits. In addition, investors can also improve price competitiveness. This market theory may not fully apply to RECLAIM due to the uniqueness of the program because RECLAIM facility operators have no substitute for RTCs, and short of curtailing operations, pollution controls cannot be implemented within a short time period. That is, there is no alternative source of credits available to RECLAIM facilities when RTC prices increase (they do not have the option to switch to another source of credits when RTCs become expensive). Therefore, they may be at the mercy of owners of surplus or investor-owned RTCs in the short term, particularly during times of rapid price increases, as evidenced in 2000 and 2001 during the California energy crisis.

To put investors' holdings in context, RECLAIM facilities have generally held back approximately 10% of their allocations each compliance year as a margin to ensure that they did not inadvertently find themselves exceeding their allocations (failing to reconcile by securing sufficient RTCs to cover their emissions) if their reported emissions were increased as the result of any problems or errors discovered by SCAQMD staff during annual audits. For Compliance Year 2012, the total RECLAIM NOx emissions were 7,810 tons. However, Compliance Year 2012 spans a period marked by a depressed economy with lower production at many manufacturing facilities and thus emissions were lower compared to historical levels. If the economy were to improve, total RECLAIM NOx emissions may approach recent historical levels (historical emission trends are illustrated in Figure 7-1). RECLAIM NOx emissions as recent as Compliance Year 2007 totaled 8,794 tons. If the recovering economy was to cause emissions to return to the 2007 level, the NOx RTC surplus would be only 895 tons (9% of allocation), which is slightly less than the traditional 10% compliance margin. Therefore, the current aggregate investors' holdings of 4.9% of NOx IYB RTCs (more than half the total surplus IYB RTCs in this scenario) have the potential to result in a sellers' market. The current rule development effort to further reduce

the overall NO_x supply to reflect current BARCT (refer to Chapter 3) has the potential to increase the importance of investors' holdings of RTCs.

While it can be argued that the holding of IYB NO_x RTCs by investors as a group is still small relative to the total supply of IYB NO_x RTCs (4.9% overall), there is no clear basis to estimate the level of IYB RTCs available for sale by non-investors or the extent of additional emissions reductions that will be achieved in future years. IYB RTCs represent an even more critical aspect of the program because these streams of RTCs are sought after to support growth at new or existing facilities. Active facilities are less likely to sell their future year RTCs as IYB. As a result, new RECLAIM facilities or facilities with modifications resulting in emissions increases are potentially at the mercy of investors holding IYB RTCs. Although investors' holdings of IYB NO_x RTCs did not change during calendar year 2013, they have the ability to purchase RTCs at any time so there is the potential for investors' holdings of IYB NO_x RTCs to increase in the future.

On the other hand, overall emissions in RECLAIM will certainly change and can be affected by various factors including installation of more emission control equipment, production changes, inclusion of additional facilities into the RECLAIM universe, and shifts in industry sectors and in the economy, in general. In January 2005, SCAQMD identified cost-effective control opportunities outside the power producing industry that would amount to 3.7 tons per day of additional NO_x reductions based on historical production rates. Staff anticipates that there are two primary mechanisms that will drive the implementation of these control technologies: implementation of BACT when existing sources reach the end of their useful lives and are replaced, and demand for RTCs approaching the supply driving up RTC prices and incentivizing the installation of emission controls. The first of these mechanisms will occur gradually over time and the second is unlikely to be significant until economic conditions change resulting in increased production at RECLAIM facilities. The significance of investors' holdings will certainly depend on the ability of RECLAIM facilities to generate adequate emissions reductions in time to dampen the effect of a sellers' market that may exist if demand surges in a short period of time, as it did during the California energy crisis of 2000-2001. Proposals to generate emission reduction credits from sources outside of RECLAIM (*i.e.*, mobile and area sources) can also dampen sudden price increases. SCAQMD staff continues to monitor investor participation in the market to ensure that such participation does not adversely impact the RECLAIM program.

Other Types of RTC Transactions and Uses

Another type of RTC trade, besides traditional trading and swapping activities, is a trade involving the contingent right (option) to buy or sell RTCs. In those transactions, one party pays a premium for the right to purchase or sell RTCs owned by the other party at a pre-determined price within a certain time period. Until RTCs are transferred from seller to buyer, prices for options are not reported, because the seller is not paid for the actual RTCs, but only for the right to purchase or sell the RTCs at a future date. These rights may or may not be actually exercised. RTC traders are obligated to report options to the SCAQMD within five business days of reaching an agreement. These reports are posted on the SCAQMD website. There was no reported trade involving the contingent right (option) to buy or sell RTCs in calendar year 2013.

As in prior years, RTCs were used in other programs during calendar year 2013. A total of 1.8 tons of NO_x RTCs and 0.8 tons of SO_x RTCs were surrendered to satisfy variance conditions. These consisted of discrete year RTCs only. However, no RTCs were surrendered to mitigate impacts from construction projects in calendar year 2013.

CHAPTER 3 EMISSION REDUCTIONS ACHIEVED

Summary

For Compliance Year 2012, aggregate NOx emissions were below total allocations by 19% and aggregate SOx emissions were below total allocations by 40%. No emissions associated with breakdowns were excluded from reconciliation with facility allocations in Compliance Year 2012. Accordingly, no mitigation is necessary to offset excluded emissions due to approved Breakdown Emission Reports. Therefore, based on audited emissions, it can be concluded that RECLAIM achieved its targeted emission reductions for Compliance Year 2012. With respect to the Rule 2015 backstop provisions, Compliance Year 2012 aggregate NOx and SOx emissions were both well below aggregate allocations and, as such, did not trigger the requirement to review the RECLAIM program.

Background

One of the primary objectives of the annual RECLAIM program audits is to assess whether RECLAIM is achieving its targeted emission reductions. Those targeted emission reductions are embodied in the annual allocations issued to RECLAIM facilities. In particular, the annual allocations reflect required emission reductions initially from the subsumed command-and-control rules and control measures, as well as from subsequent changes to BARCT. In January 2005, the Board adopted an amendment to Rule 2002 to further reduce RECLAIM NOx allocations to implement the latest BARCT. The amendments to Rule 2002 called for the NOx allocation reductions to be phased-in during Compliance Years 2007 through 2011. These changes resulted in cumulative NOx allocation reductions of 22.5% (7.7 tons/day; 2,811 tons/year) from all RECLAIM facilities by Compliance Year 2011, with the biggest single-year reduction of 11.7% in Compliance Year 2007. Similarly, the Board again amended Rule 2002 in November 2010 to implement changes in BARCT for SOx. Specifically, the November 2010 amendments called for reducing aggregate RECLAIM SOx emissions by 2,081 tons per year (48%), with the reductions phased-in from Compliance Year 2013 through Compliance Year 2019. A little over half of the SOx reductions were scheduled to occur in Compliance Year 2013 (recently completed for Cycle 1 facilities and concluding June 30, 2014 for Cycle 2 facilities).

Emissions Audit Process

Since the inception of the RECLAIM program, SCAQMD has conducted annual program audits of the emissions data submitted by RECLAIM facilities to ensure the integrity and reliability of facility reported data. The process includes reviews of APEP reports submitted by RECLAIM facilities and audits of field records and emission calculations. The audit process is described in further detail in Chapter 5 – Compliance.

SCAQMD staff adjusts the APEP-reported emissions based on audit results, as necessary. Whenever SCAQMD staff finds discrepancies, they discuss the

findings with the facility operators and provide the operators an opportunity to review changes resulting from facility audits and to present additional data or information in support of the data stated in their APEP reports. This rigorous audit process, although resource intensive, reinforces RECLAIM's emissions monitoring and reporting requirements and enhances the validity and reliability of the reported emissions data. The audited emissions are used to determine if a facility complied with its allocations. The most recent five compliance years' audited emissions for each facility are posted on SCAQMD's web page after the audits are completed. Additionally, all emissions data presented in this annual RECLAIM audit report are compiled from audited facility emissions.

Emission Trends and Analysis

RECLAIM achieves its emission reduction goals on an aggregate basis by ensuring that annual emissions are below total RTCs. It is important to understand that the RECLAIM program is successful at achieving these emission reduction goals even when some individual RECLAIM facilities exceed their RTC account balances, provided aggregate RECLAIM emissions do not exceed aggregate RTCs issued. Therefore, aggregate NO_x or SO_x emissions from all RECLAIM sources are the basis for determining whether the programmatic emission reduction goals for that emittant are met each year. In aggregating emissions from RECLAIM facilities, audited emissions are used in the Annual RECLAIM Report for that Compliance Year. Table 3-1 and Figure 3-1 show aggregate NO_x emissions based on audited emission data for Compliance Years 1994 through 2012.

Table 3-1 and Figure 3-1 show that, programmatically, there were excess NO_x RTCs remaining after accounting for audited NO_x emissions for every compliance year since 1994, except for Compliance Year 2000 when NO_x emissions exceeded the total allocations for that year due to the California energy crisis. Since Compliance Year 2007, the first year of the programmatic reduction in RECLAIM NO_x allocations which were adopted by the Governing Board as part of the January 2005 rule amendments, the unused NO_x RTCs have been at least 20 percent of the aggregate allocations. There may be other forces at play to cause such results in addition to actual emission reductions implemented through the application of air pollution control systems by RECLAIM facilities. Potentially, the effects of the nation's economic downturn and slow recovery over the last few years may also be contributing to lower aggregate emissions in the RECLAIM universe, although less so for Compliance Year 2012 as the economy has begun to improve. As shown in Table 3-1, Compliance Year 2012 NO_x emissions increased about 7% when compared to 2011 and almost 10% compared to Compliance Year 2010. This may be a reflection of the economic turnaround in the region.

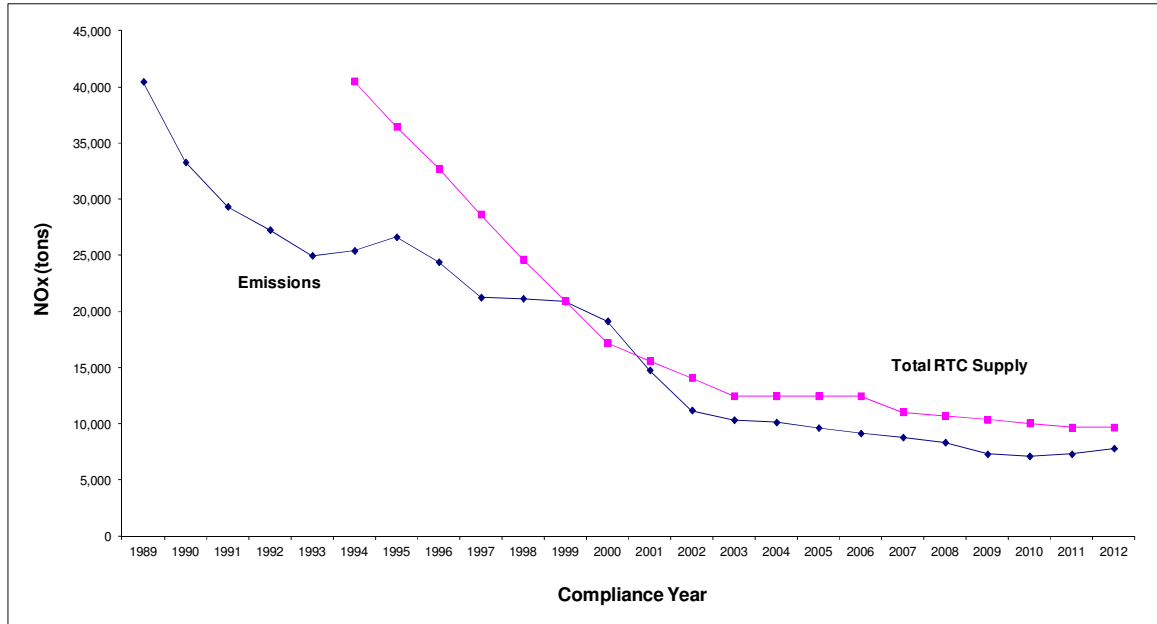
Table 3-1
Annual NOx Emissions for Compliance Years 1994 through 2012

| Compliance Year | Audited Annual NOx Emissions ¹ (tons) | Audited Annual NOx Emissions Change from 1994 (%) | Total NOx RTCs ² (tons) | Unused NOx RTCs (tons) | Unused NOx RTCs (%) |
|-----------------|--|---|------------------------------------|------------------------|---------------------|
| 1994 | 25,420 | 0% | 40,534 | 15,114 | 37% |
| 1995 | 26,632 | 4.8% | 36,484 | 9,852 | 27% |
| 1996 | 24,414 | -4.0% | 32,742 | 8,328 | 25% |
| 1997 | 21,258 | -16% | 28,657 | 7,399 | 26% |
| 1998 | 21,158 | -17% | 24,651 | 3,493 | 14% |
| 1999 | 20,889 | -18% | 20,968 | 79 | 0.38% |
| 2000 | 19,148 | -25% | 17,208 | -1,940 | -11% |
| 2001 | 14,779 | -42% | 15,617 | 838 | 5.4% |
| 2002 | 11,201 | -56% | 14,111 | 2,910 | 21% |
| 2003 | 10,342 | -59% | 12,485 | 2,143 | 17% |
| 2004 | 10,134 | -60% | 12,477 | 2,343 | 19% |
| 2005 | 9,642 | -62% | 12,484 | 2,842 | 23% |
| 2006 | 9,152 | -64% | 12,486 | 3,334 | 27% |
| 2007 | 8,794 | -65% | 11,046 | 2,252 | 20% |
| 2008 | 8,346 | -67% | 10,705 | 2,359 | 22% |
| 2009 | 7,300 | -71% | 10,377 | 3,077 | 30% |
| 2010 | 7,116 | -72% | 10,053 | 2,937 | 29% |
| 2011 | 7,302 | -71% | 9,690 | 2,388 | 25% |
| 2012 | 7,810 | -69% | 9,689 | 1,879 | 19% |

¹ The RECLAIM universe is divided into two cycles with compliance schedules staggered by six months. Compliance years for Cycle 1 facilities run from January 1 through December 31 and Cycle 2 compliance years are from July 1 through June 30.

² Total RTCs = Allocated RTCs + RTCs from ERC conversion.

**Figure 3-1
NOx Emissions and Available RTCs**



Similar to Table 3-1 and Figure 3-1 for NOx, Table 3-2 presents aggregate annual SOx emissions data for each compliance year based on audited emissions, and Figure 3-2 compares these audited aggregate annual SOx emissions with the aggregate annual SOx RTC supply. As shown in Table 3-2 and Figure 3-2, RECLAIM facilities have not exceeded their SOx allocations on an aggregate basis in any compliance year since program inception. For Compliance Year 2012, SOx emissions were below total allocations by 40%. Similar to the unused NOx RTCs, the unused SOx RTCs for the last four compliance years, inclusive of Compliance Year 2012, remain in excess of 30%. The data indicates that RECLAIM met its programmatic SOx emission reduction goals and demonstrated equivalency in SOx emission reductions compared to the subsumed command-and-control rules and control measures. Based on audited emission data, annual SOx emissions have followed a general downward trend, except for increases in Compliance Years 1995, 1997, 2005, and 2007 compared to their respective previous year.

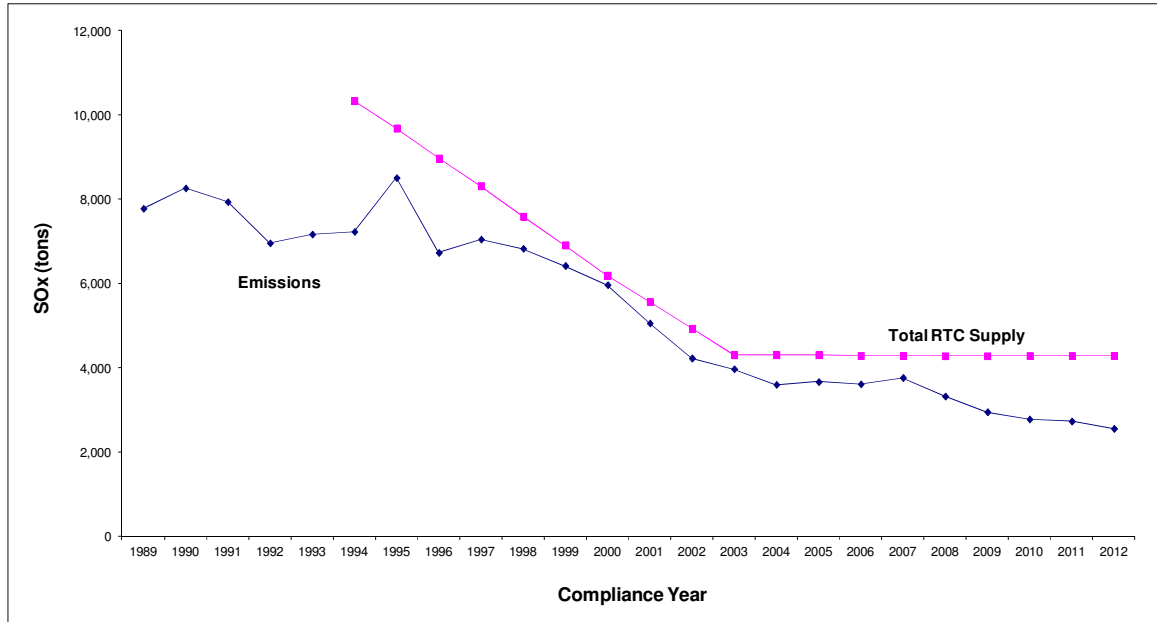
Table 3-2
Annual SOx Emissions for Compliance Years 1994 through 2012

| Compliance Year | Audited Annual SOx Emissions ¹ (tons) | Audited Annual SOx Emissions Change from 1994 (%) | Total SOx RTCs ² (tons) | SOx RTCs Left Over (tons) | SOx RTCs Left Over (%) |
|-----------------|--|---|------------------------------------|---------------------------|------------------------|
| 1994 | 7,230 | 0% | 10,335 | 3,105 | 30% |
| 1995 | 8,508 | 18% | 9,685 | 1,177 | 12% |
| 1996 | 6,731 | -6.9% | 8,976 | 2,245 | 25% |
| 1997 | 7,048 | -2.5% | 8,317 | 1,269 | 15% |
| 1998 | 6,829 | -5.5% | 7,592 | 763 | 10% |
| 1999 | 6,420 | -11% | 6,911 | 491 | 7.1% |
| 2000 | 5,966 | -17% | 6,194 | 228 | 3.7% |
| 2001 | 5,056 | -30% | 5,567 | 511 | 9.2% |
| 2002 | 4,223 | -42% | 4,932 | 709 | 14% |
| 2003 | 3,968 | -45% | 4,299 | 331 | 7.7% |
| 2004 | 3,597 | -50% | 4,299 | 702 | 16% |
| 2005 | 3,663 | -49% | 4,300 | 637 | 15% |
| 2006 | 3,610 | -50% | 4,282 | 672 | 16% |
| 2007 | 3,759 | -48% | 4,286 | 527 | 12% |
| 2008 | 3,319 | -54% | 4,280 | 961 | 22% |
| 2009 | 2,946 | -59% | 4,280 | 1,334 | 31% |
| 2010 | 2,775 | -62% | 4,282 | 1,507 | 35% |
| 2011 | 2,727 | -62% | 4,283 | 1,556 | 36% |
| 2012 | 2,552 | -65% | 4,283 | 1,731 | 40% |

¹ The RECLAIM universe is divided into two cycles with compliance schedules staggered by six months. Compliance years for Cycle 1 facilities run from January 1 through December 31 and Cycle 2 compliance years are from July 1 through June 30.

² Total RTCs = Allocated RTCs + RTCs from ERC conversion.

**Figure 3-2
SOx Emissions and Available RTCs**



Comparison to Command-and-Control Rules

RECLAIM subsumed a number of command-and-control rules¹ and sought to achieve reductions equivalent to these subsumed rules. RECLAIM facilities are exempt from the subsumed rules' requirements that apply to SOx or NOx emissions once the facilities comply with the applicable monitoring requirements of Rules 2011 - Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Sulfur (SOx) Emissions or 2012 - Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NOx) Emissions, respectively. During Compliance Year 2012, one of the subsumed rules, Rule 1110.2 – Emissions from Gaseous and Liquid-Fueled Engines, was amended on September 7, 2012. Even though this rule was subsumed by RECLAIM, the February 1, 2008 amendment to Rule 1110.2 added, in part, emission standards for new non-emergency engines driving electrical generators that are specifically applicable to both RECLAIM and non-RECLAIM facilities. The purpose of the September 2012 rule amendment was to re-affirm the previously adopted emission limits for biogas-powered internal combustion engines as well as to provide: additional time for compliance, a compliance option for a longer averaging time for engines with superior performance in achieving lower mass emissions, and a compliance option that further extends the effective dates for certain engines based on a compliance flexibility fee. This amended rule did not impose a new category-wide equipment emission limit change and did not alter the RECLAIM-related portions of the rule concerning new non-emergency engines driving electrical generators. Instead, it extended the compliance timeline for the command and control emission limit already existing in the 2008 amendment of the rule for operators of biogas-powered internal combustion

¹ See Tables 1 and 2 of Rule 2001.

engines. The emission limit was based on the Interim Report on the Technology Assessment for Rule 1110.2 Biogas Engines presented to the Governing Board in July 2010.

Other rules amended or adopted during Compliance Year 2012 but not subsumed by RECLAIM included Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II, Rule 1114 – Petroleum Refining Coking Operations, and Rule 1148.2 – Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers.

The May 3, 2013 amendment to Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II excluded several categories of equipment with de minimus emissions from the requirement to obtain written permits to facilitate the streamlining of the District's permitting system. Similarly, the May 3, 2013 amendment to Rule 222 – Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II included additional categories to the streamlined filing/registration program of Rule 222 and clarified and enhanced the enforceability and the ability to appeal operating conditions issued pursuant to the provisions of that rule.

Rule 1114 – Petroleum Refining Coking Operations, adopted on May 3, 2013, established a depressurization limit of less than two pounds per square inch gauge (psig) pressure prior to venting a coke drum to atmosphere. Additionally, it included into the rule options for alternative compliance schedules and interim limits for facilities not able to meet the less than two psig compliance deadline within six months of rule adoption, depending on the number of delayed coking units they operate. The intent of the adopted rule was to reduce volatile organic compounds, particulate matter, hazardous air pollutants, sulfur compounds and methane emissions released during the delayed coking process at petroleum refineries. Furthermore, the rule also included deadlines for permit applications, installation of monitoring equipment and exemptions from certain Regulation IV requirements.

Finally, on April 5, 2013 Rule 1148.2 – Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers was adopted. This rule established requirements for owners or operators of onshore oil and gas wells within SCAQMD's jurisdiction to notify the Executive Officer when conducting well drilling, well completion, and well reworking activities that involve production stimulation activities such as hydraulic fracturing, gravel packing and/or acidizing. Rule 1148.2 also initiated emissions and chemical reporting requirements. Additionally, this rule also impacted suppliers of chemicals and additives used in drilling, rework, and well completion fluids.

Rules 219, 222, 1114, and 1148.2 are not subsumed under RECLAIM, they apply equally to RECLAIM and non-RECLAIM facilities. The amendment to Rule 1110.2 did not impose new emission limits. Therefore, there are no differential impacts between RECLAIM and non-RECLAIM facilities as a result of these rule amendments/adoptions.

Program Amendments

The Governing Board amended Rule 2002 – Allocations for Oxides of Nitrogen (NO_x) and Oxides of Sulfur (SO_x) in November 2010. These amendments call for SO_x RTCs to be adjusted to achieve a 48.4% (2080.5 tons/yr) overall

reduction, phased in from Compliance Year 2013 through Compliance Year 2019. If overall SOx emissions were to remain unchanged at the Compliance Year 2012 level, then emissions would exceed allocations in Compliance Year 2017.

During Compliance Year 2012, there were no new amendments to Regulation XX adopted by SCAQMD's Governing Board. However, on December 7, 2012 SCAQMD Governing Board did adopt the 2012 AQMP, including Control Measure CMB-01 – Further NOx Reductions from RECLAIM that proposes to reduce NOx emissions from RECLAIM sources by three to five tons per day by 2020. The reductions were originally planned for two phases – two to three tons per day by Compliance Year 2015 in Phase I and an additional one to two tons per day by 2020 in Phase II. Rule development is currently underway with an anticipated public hearing in 2014 to consider the reductions as a single amendment (the reductions, if adopted, will most likely be implemented in phases over a number of years).

Breakdowns

Pursuant to Rule 2004(i) – Breakdown Provisions, a facility may request that emissions increases due to a breakdown not be counted towards the facility's allocations. In order to qualify for such exclusion, the facility must demonstrate that the excess emissions were the result of a fire or a mechanical or electrical failure caused by circumstances beyond the facility's reasonable control. The facility must also take steps to minimize emissions resulting from the breakdown, and mitigate the excess emissions to the maximum extent feasible. Applications for exclusion of unmitigated breakdown emissions from a facility's total reported annual RECLAIM emissions must be approved by SCAQMD in writing. In addition, facilities are required to quantify unmitigated breakdown emissions for which an exclusion request has been approved in their APEP report.

As part of the annual program audit report, Rule 2015(d)(3) requires SCAQMD staff to determine whether excess emissions approved to be excluded from RTC reconciliation have been programmatically offset by unused RTCs within the RECLAIM program. If the breakdown emissions exceed the unused RTCs, any excess breakdown emissions must be offset by either: (1) deducting the amount of emissions not programmatically offset from the RTC holdings for the subsequent compliance year from facilities that had unmitigated breakdown emissions, proportional to each facility's contribution to the total amount of unmitigated breakdown emissions; and/or (2) RTCs obtained by the Executive Officer for the compliance year following the completion of the annual program audit report in an amount sufficient to offset the unmitigated breakdown emissions.

As shown in Table 3-3, a review of APEP reports for Compliance Year 2012 found that no facilities requested to exclude breakdown emissions from being counted against their allocations. Thus, for Compliance Year 2012, no additional RTCs are required to offset breakdown emissions pursuant to Rule 2015(d)(3).

Table 3-3
Breakdown Emission Comparison for Compliance Year 2012

| Emittant | Compliance Year 2012 Unused RTCs (tons) | Unmitigated Breakdown Emissions¹ (tons) | Remaining Compliance Year 2012 RTCs (tons) |
|-----------------|--|---|---|
| NOx | 1,879 | 0 | 1,879 |
| SOx | 1,731 | 0 | 1,731 |

¹ Data for unmitigated breakdown emissions (not counted against Allocation) as reported under APEP reports.

Impact of Changing Universe

As discussed in Chapter 1, two facilities were included, no facility was excluded and five facilities shut down in Compliance Year 2012. Changes to the universe of RECLAIM facilities have the potential to impact emissions and the supply and demand of RTCs, and therefore, may impact RECLAIM emission reduction goals.

Existing facilities (defined by Rule 2000 as those with valid SCAQMD Permits to Operate issued prior to October 15, 1993 and that continued to be in operation or possess valid SCAQMD permits on October 15, 1993) that are not categorically excluded may choose to enter the program even though they do not meet the inclusion criteria. They may also be included by SCAQMD if their facility-wide emissions increase to four tons or more per year of NOx or SOx or both. When one of these existing facilities enters the program, they are issued RTC allocations based on their operational history pursuant to the methodology prescribed under Rule 2002. Inclusions of existing facilities may affect demand more than supply because even though these facilities are issued RTCs based on their operational history, the amount may not be sufficient to offset their current or future operations. Overall, inclusions shift the accounting of emissions from the universe of non-RECLAIM sources to the universe of RECLAIM sources without actually changing the overall emissions inventory. Finally, inclusions change the rules and requirements that apply to the affected facilities. There were no existing facilities that chose to opt into the RECLAIM program between July 1, 2012 and June 30, 2013 and none were included into the RECLAIM program during Compliance Year 2012 based on the Rule 2001 threshold of actual NOx and/or SOx emissions greater than or equal to four tons per year.

Facilities that received all SCAQMD Permits to Operate on or after October 15, 1993 are defined by Rule 2000 as new facilities. New facilities can choose to enter RECLAIM or can be included due to actual NOx or SOx emissions in excess of four tons or more per year. New facilities are not issued RTCs based on operational history, but any external offsets provided by the facility are converted to RTCs. There was one new facility that elected to opt-in between July 1, 2012 and June 30, 2013. When a new facility joins the RECLAIM universe, it is required to obtain sufficient RTCs to offset its NOx or SOx emissions. These RTCs must be obtained through the trading market and are not issued by SCAQMD to the facility. Such facilities increase the overall

demand for the fixed supply of RTCs because they increase total RECLAIM emissions without increasing the total supply of RTCs.

Additionally, facilities that undergo a partial change of operator may have an impact on emissions, depending on the operating conditions of the facility under the new operator. No additional allocations are issued as a consequence of a facility splitting into two and undergoing a partial change of operator. Therefore, the supplies of NO_x and SO_x RTCs are not impacted. Between July 1, 2012 and June 30, 2013 there was one facility included into the RECLAIM universe as a result of the partial change of operator of a facility already in RECLAIM.

The shutdown of a RECLAIM facility results in a reduction in actual emissions. The shutdown facility retains its RTC holdings, which it may continue to hold as an investment, transfer to another facility under common ownership, or trade on the market. Therefore, although the facility is no longer emitting, its RTCs may be used at another facility. Shutdown facilities have the opposite effect on the RTC market as do new facilities: the overall demand for RTCs is reduced while the supply remains constant. As reported in Chapter 1, five RECLAIM facilities (one of which was a NO_x and SO_x facility, and the other four which were NO_x-only facilities) shut down permanently between July 1, 2012 and June 30, 2013.

A facility is excluded from the RECLAIM universe if SCAQMD staff determines that the facility was included in the program in error. In such cases, both the emissions and the RTCs that were issued to the facility for future years are withdrawn, thereby having a neutral impact on the RTC supply. Exclusions have the reverse affect as inclusions, in that the accounting of emissions is shifted from the RECLAIM universe of sources to the non-RECLAIM universe of sources. No facilities were excluded between July 1, 2012 and June 30, 2013.

In short, inclusion of new facilities and facilities that result from a partial change of operator, as well as the shutdown of RECLAIM facilities, change the demand for RTCs without changing the supply², while exclusions of existing facilities make corresponding changes to both the demand and the supply, thereby mitigating their own impact on the markets and shifting emissions between the RECLAIM and non-RECLAIM universes.

Compliance Year 2012 NO_x and SO_x audited emissions and initial allocations for facilities that were shut down, excluded, or included into the program during Compliance Year 2012 are summarized in Tables 3-4 and 3-5.

² Facilities that were initially permitted after the October 1993 adoption of RECLAIM and that provided NO_x or SO_x ERCs to offset their emissions are issued RTCs corresponding to the ERCs provided.

**Table 3-4
NOx Emissions Impact from the Changes in Universe (Tons)**

| Category | Compliance Year 2012 NOx Emissions (tons) | Allocated Compliance Year 2012 NOx RTCs (tons) |
|---------------------|---|--|
| Shutdown Facilities | 4.5 | 10.0 |
| Excluded Facilities | Not applicable | Not applicable |
| Included Facilities | 172.0 | 0 |
| RECLAIM Universe | 7,810 | 9,689 |

**Table 3-5
SOx Emissions Impact from the Changes in Universe (Tons)**

| Category | Compliance Year 2012 SOx Emissions (tons) | Allocated Compliance Year 2012 SOx RTCs (tons) |
|---------------------|---|--|
| Shutdown Facilities | 1.3 | 3.7 |
| Excluded Facilities | Not applicable | Not applicable |
| Included Facilities | Not applicable | Not applicable |
| RECLAIM Universe | 2,552 | 4,283 |

Backstop Provisions

Rule 2015 requires that SCAQMD review the RECLAIM program and implement necessary measures to amend it whenever aggregate emissions exceed the aggregate allocations by five percent or more, or whenever the average annual price of RTCs exceeds \$15,000 per ton. Compliance Year 2012 aggregate NOx and SOx emissions were both below aggregate allocations as shown in Figures 3-1 and 3-2. At the same time, average annual prices for NOx and SOx RTCs in calendar year 2012 were below \$15,000 per ton, as shown in Chapter 2. Therefore, there is no need to initiate a program review.

CHAPTER 4 NEW SOURCE REVIEW ACTIVITY

Summary

The annual program audit assesses New Source Review (NSR) activity from RECLAIM facilities in order to ensure that RECLAIM is complying with federal NSR requirements and state no net increase (NNI) in emissions requirements, while providing flexibility to facilities in managing their operations and allowing new sources into the program. In Compliance Year 2012, a total of 46 NO_x RECLAIM facilities had NSR NO_x emission increases, and four SO_x RECLAIM facilities had NSR SO_x emission increases due to expansion or modification. Consistent with all prior compliance years, there were sufficient NO_x and SO_x RTCs available to allow for expansion, modification, and modernization by RECLAIM facilities.

RECLAIM is required to comply with federal NSR emissions offset requirements at a 1.2-to-1 offset ratio programmatically for NO_x emission increases and a 1-to-1 offset ratio for SO_x emission increases on a programmatic basis. In Compliance Year 2012, RECLAIM provided an offset ratio based on the compliance year's total unused allocations and total NSR emission increases of 9-to-1 for NO_x, demonstrating federal equivalency. RECLAIM inherently complies with the federally-required 1-to-1 SO_x offset ratio for any compliance year, provided aggregate SO_x emissions under RECLAIM are lower than or equal to aggregate SO_x allocations for that compliance year. As shown in Chapter 3, there was no programmatic SO_x exceedance during Compliance Year 2012; in fact, there was a surplus of SO_x RTCs. Therefore, RECLAIM more than complied with the federally-required SO_x offset ratio and further quantification of the SO_x offset ratio is unnecessary. Compliance with the federally-required offset ratio also demonstrates compliance with any applicable state NNI requirements for new or modified sources. In addition, RECLAIM requires application of, at a minimum, California Best Available Control Technology (BACT), which is very similar to federal Lowest Achievable Emission Rate (LAER), for all new or modified sources with emission increases. In addition, more stringent control technology can be required pursuant to RECLAIM if it is determined to be cost effective as compared to AQMP measures or adopted SCAQMD rules.

Background

Emissions increases from the construction of new or modified stationary sources in non-attainment areas are regulated by both federal NSR and state NNI requirements to ensure that progress toward attainment of ambient air quality standards is not hampered. RECLAIM is designed to comply with federal NSR

and state NNI requirements without hindering facilities' ability to expand or modify their operations¹.

Title 42, United States Code §7511a, paragraph (e), requires major sources in extreme non-attainment areas to offset emission increases of extreme non-attainment pollutants and their precursors at a 1.5-to-1 ratio based on potential to emit. However, if all major sources in the extreme non-attainment area are required to implement federal BACT, a 1.2-to-1 offset ratio may be used. Federal BACT is comparable to California's BARCT. SCAQMD requires all existing major sources to employ federal BACT/California BARCT and, therefore, is eligible for a 1.2-to-1 offset ratio for ozone precursors (*i.e.*, NO_x and VOC). The federal offset requirement for major SO₂ sources is at least a 1-to-1 ratio, which is lower than the aforementioned 1.2-to-1 ratio. Even though the Basin is in attainment with SO_x standards, SO_x is a precursor to PM₁₀ which is a non-attainment air pollutant in the Basin. The applicable offset ratio for PM₁₀ is at least 1-to-1, thus, the applicable offset ratio for SO_x is 1-to-1. Health and Safety Code §40920.5 requires "no net increase in emissions from new or modified stationary sources of non-attainment pollutants or their precursors" (*i.e.*, a 1-to-1 offset ratio on an actual emissions basis). All actual RECLAIM emissions are offset at a 1-to-1 ratio provided there is not a programmatic exceedance of aggregate allocations, thus satisfying the federal offset ratio for SO_x and state NNI requirements for both SO_x and NO_x. Annual RTC allocations follow a programmatic reduction to reflect changes in federal BACT/California BARCT and thereby comply with federal and state offset requirements.

RECLAIM requires California BACT/federal LAER for new or modified sources with increases in hourly potential to emit of RECLAIM pollutants. This provision complies with both the state and federal requirements regarding control technologies for new or modified sources. In addition to offset and BACT requirements, RECLAIM subjects RTC trades that are conducted to mitigate emissions increases over the sum of the facility's starting allocation and non-tradable/non-usable credits to trading zone restrictions to ensure net ambient air quality improvement within the sensitive zone established by Health and Safety Code §40410.5. Furthermore, facilities with actual RECLAIM emissions that exceed their initial allocation by 40 tons per year or more are required to analyze the potential impact of their emissions increases through air quality modeling.

Rule 2005 – New Source Review for RECLAIM requires RECLAIM facilities to provide (hold), prior to the start of operation, sufficient RTCs to offset the annual increase in potential emissions for the first year of operation at a 1-to-1 ratio. The same rule also requires existing RECLAIM facilities that increase their annual allocations above the level of their starting allocations plus non-tradable/non-usable credits and all new RECLAIM facilities² to provide sufficient RTCs to offset the annual potential emissions increase from new or modified

¹ Federal NSR applies to federal major sources (sources with the potential to emit at least 10 tons of NO_x or 100 tons of SO_x per year for the South Coast Air Basin) and state NNI requirements apply to all NO_x sources and to SO_x sources with the potential to emit at least 15 tons per year in the South Coast Air Basin. RECLAIM's NSR provisions apply to all facilities in the program, including those not subject to federal NSR or state NNI (although the threshold for RECLAIM inclusions is four tons per year of NO_x or SO_x emissions, some RECLAIM facilities have actual emissions much less than 4 tons per year).

² New facilities are facilities that received all District Permits to Construct on or after October 15, 1993. All other facilities are existing facilities.

source(s) at a 1-to-1 ratio at the commencement of each compliance year after the start of operation of the new or modified source(s). Although RECLAIM allows a 1-to-1 offset ratio for emissions increases, RECLAIM complies with the federal offset requirement by complying with the 1.2-to-1 offset requirement for NO_x on an aggregate basis. This annual program audit report assesses NSR permitting activities for Compliance Year 2012 to verify that programmatic compliance of RECLAIM with federal and state NSR requirements has been maintained.

NSR Activity

Evaluation of NSR data for Compliance Year 2012 shows that RECLAIM facilities were able to expand and modify their operations while complying with NSR requirements. During Compliance Year 2012, a total of 46 NO_x RECLAIM facilities (26 in Cycle 1 and 20 in Cycle 2) were issued permits to operate, which resulted in a total of 237.18 tons per year of NO_x emission increases from starting operations of new or modified sources, and four SO_x RECLAIM facilities (one facility in Cycle 1 and three facilities in Cycle 2) experienced a total of 7.53 tons per year of SO_x NSR emission increases that resulted from starting operations of new or modified permitted sources. These emission increases were calculated pursuant to Rule 2005(d) – Emission Increase. As in previous years, there were adequate unused RTCs (NO_x: 1,879 tons, SO_x: 1,731 tons; see Chapter 3) in the RECLAIM universe for use to offset these emission increases at the appropriate offset ratios.

NSR Compliance Demonstration

RECLAIM is designed to programmaticly comply with the federal NSR offset requirements. Meeting the NSR requirement (offset ratio of 1.2-to-1 for NO_x and at least 1-to-1 for SO_x) also demonstrates compliance with the state NNI requirements. Section 173 (c) of the federal Clean Air Act (CAA) states that only emissions reductions beyond the requirements of the CAA, such as federal Reasonably Available Control Technology (RACT), shall be considered creditable as emissions reductions for offset purposes. Since the initial allocations (total RTC supply in Compliance Year 1994) already met federal RACT requirements when the program was initially implemented, any emissions reductions beyond the initial allocations are available for NSR offset purposes until RACT becomes more stringent. The programmatic offset ratio calculations presented in the Annual RECLAIM Audit Reports for Compliance Years 1994 through 2004 relied upon aggregate Compliance Year 1994 allocations as representing RACT. However, staff recognizes that RACT may have become more stringent in the intervening years, so it may no longer be appropriate to calculate the programmatic offset ratio based upon aggregate 1994 allocations.

Aggregate allocations for each compliance year represent federal BACT, which is equivalent to local BARCT. Federal BACT is more stringent than federal RACT (*i.e.*, the best available control technology is more stringent than what is reasonably available), so staff started using current allocations (federal BACT) as a surrogate for RACT as the basis for calculating programmatic NO_x and SO_x offset ratios in the annual program audit report for Compliance Year 2005 and is continuing to do so for NO_x in this report. This is a more conservative (*i.e.*, more stringent) approach than using actual RACT and is much more conservative than

using aggregate Compliance Year 1994 allocations. The advantage of this approach is that, as long as the calculated NOx offset ratio is at least 1.2-to-1, it provides certainty that RECLAIM has complied with federal and state offset requirements without the need to know exactly where RACT lies for RECLAIM facilities. However, if this very conservative approach should ever fail to demonstrate that the aggregate NOx offset ratio for any year is at least 1.2-to-1, that will not necessarily mean RECLAIM has not actually complied with the federally required 1.2-to-1 NOx offset ratio. Rather it will indicate that further analysis is required to accurately identify RACT so that the actual offset ratio can be calculated and a compliance determination made.

Provided aggregate RECLAIM emissions do not exceed aggregate allocations, all RECLAIM emissions are offset at a ratio of 1-to-1. This leaves all unused allocations available to provide offsets beyond the 1-to-1 ratio for NSR emission increases. Unused allocations are based on all Cycle 1 and Cycle 2 RTCs of a given compliance year and the aggregate RECLAIM emissions for the selected time period. The NSR emission increase is the sum of emission increases due to permit activities at all RECLAIM facilities during the same compliance year. The aggregate RECLAIM offset ratios are expressed by the following formula:

$$\text{Offset Ratio} = \left(1 + \frac{\text{compliance year's total unused allocations}}{\text{total NSR emission increases}} \right)\text{-to-1}$$

As stated in the previous section under the title of "NSR Activity", permits to operate issued to 46 RECLAIM facilities resulted in 237.18 tons of NOx emission increase pursuant to Rule 2005(d). Additionally, as identified in Table 3-1 (Annual NOx Emissions for Compliance Years 1994 through 2012), 1,879 tons of Compliance Year 2012 NOx RTCs remained unused. Therefore, the Compliance Year 2012 NOx programmatic offset ratio calculated from this methodology is 9-to-1 as shown below:

$$\begin{aligned} \text{Offset Ratio} &= \left(1 + \frac{1,879 \text{ tons}}{237.18 \text{ tons}} \right)\text{-to-1} \\ &= 9\text{-to-1} \end{aligned}$$

RECLAIM continues to generate sufficient excess emissions reductions to provide a NOx offset ratio greater than the 1.2-to-1 required by federal law. This compliance with the federal offset requirements is built into the RECLAIM program through annual reductions of the allocations assigned to RECLAIM facilities and the subsequent allocation adjustments adopted by the Governing Board to implement BARCT. The required offset ratio for SOx is 1-to-1. Since RECLAIM facilities are required to secure, at a minimum, adequate RTCs to cover their actual emissions, the SOx offset ratio is met automatically provided there is no programmatic exceedance of aggregate SOx allocations for that compliance year. As stated earlier in Chapter 3, there were 1,731 tons of excess (unused) SOx RTCs for Compliance Year 2012. Therefore, there is certainty that both the federally required SOx offset ratio and the California NNI requirement for

SOx were satisfied and a separate calculation of the SOx offset ratio is not necessary.

BACT and modeling are also required for any RECLAIM facility that installs new equipment or modifies existing sources if the installation or modification results in an increase in emissions of RECLAIM pollutants. Furthermore, the RTC trading zone restrictions in Rule 2005 – New Source Review for RECLAIM, limit trades conducted to offset emission increases over the sum of the facility's starting allocation and non-tradable/non-usable credits to ensure net ambient air quality improvement within the sensitive zone, as required by state law.

The result of the review of NSR activity in Compliance Year 2012 shows that RECLAIM is in compliance with both state NNI and federal NSR requirements. SCAQMD staff will continue to monitor NSR activity under RECLAIM in order to assure continued progress toward attainment of ambient air quality standards without hampering economic growth in the Basin.

Modeling Requirements

Rule 2004, as amended in May 2001, requires RECLAIM facilities with actual NOx or SOx emissions exceeding their initial allocation in Compliance Year 1994 by 40 tons per year or more to conduct modeling to analyze the potential impact of the increased emissions. The modeling analysis is required to be submitted within 90 days of the end of the compliance year. For Compliance Year 2012, one RECLAIM facility³ was subject to this requirement. The facility submitted modeling analysis that showed that its NOx emissions complied with the most stringent ambient air quality standards set forth in Rule 2005, Appendix A.

³ Under the requirements of Rule 2004(q), Mountainview Power Company (Facility ID 160437) was required to submit modeling analysis for its NOx emissions in Compliance Year 2012.

CHAPTER 5 COMPLIANCE

Summary

Of the 278 NO_x RECLAIM facilities during Compliance Year 2012, a total of 265 facilities (95%) complied with their NO_x allocations, and all but one of the 33 SO_x facilities (97%) complied with their SO_x allocations. The 13 NO_x facilities that exceeded their NO_x allocations had aggregate NO_x emissions of 1,208 tons and did not have adequate allocations to offset 361.1 tons (or 29.9%) of their combined emissions. This exceedance amount is small compared to the overall allocations for Compliance Year 2012 (3.7% of total NO_x allocations). One SO_x facility had SO_x emissions that exceeded its SO_x allocations by only three pounds. The exceedances from these 13 facilities (12 NO_x-only facilities and one NO_x and SO_x facility) did not impact the overall RECLAIM emission reduction goals. Pursuant to Rule 2010(b)(1)(A), all 13 facilities had their respective exceedances deducted from their annual allocations for the compliance year subsequent to the date of SCAQMD's determination that the facilities exceeded their Compliance Year 2012 allocations. The overall RECLAIM NO_x and SO_x emission reduction targets and goals were met for Compliance Year 2012 (i.e., aggregate emissions for all RECLAIM facilities were well below aggregate allocations).

Background

RECLAIM facilities have the flexibility to choose among compliance options to meet their annual allocations by reducing emissions, trading RTCs, or a combination of both. However, this flexibility must be supported by standardized emission MRR requirements to ensure the reported emissions are real, quantifiable, and enforceable. As a result, detailed MRR protocols are specified in the RECLAIM regulation to guarantee accurate and verifiable emission reports.

The MRR requirements were designed to provide accurate and up-to-date emission reports. Once facilities install and complete certification of the required monitoring and reporting equipment, they are relieved from command-and-control rule limits and requirements subsumed under Rule 2001. Mass emissions from RECLAIM facilities are then determined directly by monitoring and reporting equipment for some sources and from data generated by monitoring equipment for others. If monitoring equipment fails to produce quality-assured data or the facility fails to file timely emissions reports, RECLAIM rules require emissions be determined by a rule-prescribed methodology known as Missing Data Procedures or "MDP." Depending on past performance of the monitoring equipment (*i.e.*, availability of quality-assured data) and the duration of the missing data period, MDP use a tiered approach to calculate emissions. As availability of quality-assured data increases, the MDP-calculated emissions become more representative of the actual emissions, but when the availability of quality-assured data is low, MDP calculations become more conservative and approach, to some extent, "worst case" assessments.

Allocation Compliance

Requirements

At the beginning of the RECLAIM program in 1994 or at the time a facility is included in the RECLAIM program, each RECLAIM facility is issued an annual allocation for each compliance year pursuant to methodology prescribed under Rule 2002. For a facility in existence prior to October 1993, it is issued allocations by the SCAQMD based on its historical production rate. A facility without an operating history prior to 1994 receives no allocation and must purchase enough RTCs to cover the emissions for their operations, except facilities that have provided ERCs to offset emission increases prior to entering RECLAIM. At the time of joining RECLAIM, these facilities are issued RTCs on an annual basis, converted from the amount of offsets provided. Additionally, all facilities entering RECLAIM holding any ERCs generated at and held by the individual facility itself have those ERCs converted to RTCs and added to their allocated RTCs. Knowing their emission goals, RECLAIM facilities have the flexibility to manage their emissions in order to meet their allocations in the most cost-effective manner. Facilities may employ emission control technology or process changes to reduce emissions, buy RTCs, or sell unneeded RTCs.

Facilities may buy RTCs or sell excess RTCs at any time during the year in order to ensure that their emissions are covered. There is a thirty day reconciliation period commencing at the end of each of the first three quarters of each compliance year. In addition, after the end of each compliance year, there is a 60-day reconciliation period (instead of 30 days as at the end of the first three quarters) during which facilities have a final opportunity to buy or sell RTCs for that compliance year. Each RECLAIM facility must hold sufficient RTCs in its allocation account to cover its quarterly as well as year-to-date emissions for the compliance year at the end of each reconciliation period. By the end of each quarterly and annual reconciliation period, each facility is required to certify the emissions for the preceding quarter and/or compliance year by submitting its Quarterly Certification of Emissions Reports (QCERs) and/or APEP report, respectively.

Compliance Audit

Since the beginning of the program, SCAQMD staff has conducted annual program audits of all emission reports submitted by RECLAIM facilities to ensure their integrity and reliability. The audit process includes conducting field inspections to check process equipment, monitoring devices, and operational records. Additionally, emissions calculations are performed in order to verify emissions reported electronically to SCAQMD or submitted in QCERs and APEP reports. These inspections revealed that some facilities made errors in quantifying their emissions such as arithmetic errors, used incorrect emission factors or adjustment factors (*e.g.*, pressure correction factors and bias adjustment factors), used emission calculation methodologies not allowed under the rules, used MDP inappropriately, or did not use MDP when required. Other common mistakes included reporting non-RECLAIM emissions and/or omitting reportable emissions.

Whenever an audit revealed a facility's emissions to be in excess of its annual allocation, the facility was provided an opportunity to review the audit and to

present additional data to further refine audit results. This extensive and rigorous audit process ensures valid and reliable emissions data.

Compliance Status

During this compliance year, a total of 13 RECLAIM facilities failed to reconcile their emissions (12 NOx-only facilities and one facility that exceeded both its NOx and SOx allocations). Ten of these 13 facilities failed to secure sufficient RTCs to cover their reported emissions during either the quarterly or annual reconciliation periods. Of these ten facilities, three facilities (two NOx-only facilities and one NOx and SOx facility), had additional reasons for NOx exceedance such as applying incorrect stackflow calculations, using incorrect emission factors, failing to apply MDP, and using incorrect MDP (the facility with a SOx exceedance failed to secure sufficient SOx RTCs to cover reported SOx emissions). Of the remaining three facilities, one exceeded its allocations because the facility failed to apply bias adjustment factors to its calculated major source emissions. The second facility failed to account for emissions from two reportable sources, failed to report all of the emissions from equipment that are exempt from obtaining SCAQMD permit pursuant to Rule 219, and failed to apply a pressure correction factor in order to standardize its process unit fuel usage. The third facility failed to replace its major source turbines emissions data as reported by their CEMS with MDP based emissions because the facility failed to conduct RATA tests until about two and a half months beyond the rule-specified deadline. Overall, the Compliance Year 2012 allocation compliance rate is 95% (265 out of 278 facilities) for NOx RECLAIM facilities and 97% (32 out of 33 facilities) for SOx RECLAIM facilities. For purposes of comparison, the allocation compliance rates for Compliance Year 2011 were 93% and 100% for NOx and SOx RECLAIM facilities, respectively. The 13 facilities that had NOx emissions in excess of their individual NOx allocations had 1,208 tons of NOx emissions and did not have adequate RTCs to cover 361.1 of those tons (or 29.9%). This exceedance amount (3.7% of aggregate NOx allocations) is small compared to the overall allocations for Compliance Year 2012. One SOx facility had SOx emissions that exceeded its SOx allocations by only three pounds. Pursuant to Rule 2010(b)(1)(A), all 13 facilities had their respective exceedances deducted from their annual emissions allocations for the compliance year subsequent to SCAQMD's determination that the facilities exceeded their Compliance Year 2012 allocations.

Impact of Missing Data Procedures

MDP was designed to provide a method for determining emissions when an emission monitoring system fails to yield valid emissions. For major sources, these occurrences may be caused by failure of the monitoring systems, the data acquisition and handling systems, or by lapses in the Continuous Emission Monitoring System (CEMS) certification period. Major sources are also required to use MDP for determining emissions whenever daily emissions reports are not submitted by the applicable deadline. When comparing actual emissions with a facility's use of substituted MDP emissions, the range of MDP emissions can vary from "more representative" to emissions being overstated to reflect a "worst case"¹ scenario. For instance, an MDP "worst case" scenario may occur for

¹ Based on uncontrolled emission factor at maximum rated capacity of the source and 24 hours per day.

major sources that fail to have their CEMS certified in a timely manner, and therefore, have no valid CEMS data that can be used for substitution. In other cases, where prior CEMS data is available, MDP is applied in tiers depending on the duration of missing data periods and the historical availability of monitoring systems. As the duration of missing data periods gets shorter and the historical availability of monitoring systems gets higher, the substitute data yielded by MDP becomes more representative of actual emissions².

In addition to MDP for major sources, RECLAIM rules also define MDP for large sources and process units. These procedures are applicable when a process monitoring device fails or when a facility operator fails to record fuel usage or other monitored data (e.g., hours of operation). The resulting MDP emissions reports are reasonably representative of the actual emissions because averaged or maximum emissions from previous operating periods may be used. However, for extended missing data periods (more than two months for large sources or four quarters or more for process units) or when emissions data for the preceding year are unavailable, large source and process unit MDP are also based on maximum operation or worst case assumptions.

Based on APEP reports, 95 NO_x facilities and 13 SO_x facilities used MDP in reporting portions of their annual emissions during Compliance Year 2012. In terms of mass emissions, 7.5% of the total reported NO_x emissions and 4.5% of the total reported SO_x emissions in the APEP reports were calculated using MDP for Compliance Year 2012. Table 5-1 compares the impact of MDP on reported annual emissions for the last few compliance years and the second compliance year, 1995 (MDP was not fully implemented during Compliance Year 1994).

² Based on averaged emissions during periods before and after the period for which data is not available.

Table 5-1
MDP Impact on Annual Emissions

| Year | Percent of Reported Emissions Using Substitute Data* | |
|------|---|-----------------------|
| | NOx | SOx |
| 1995 | 23.0% (65 / 6,070) | 40.0% (12 / 3,403) |
| 2006 | 2.5% (48 / 220) | 0.0% (0 / 0) |
| 2007 | 5.6% (78 / 489) | 7.0% (14 / 262) |
| 2008 | 7.6% (86 / 625) | 7.5% (9 / 242) |
| 2009 | 7.8% (103 / 554) | 13.8% (15 / 403) |
| 2010 | 7.0% (93 / 488) | 6.1% (23 / 168) |
| 2011 | 6.2% (94 / 435) | 12.4% (19 / 328) |
| 2012 | 7.5% (95 / 560) | 4.5% (13 / 114) |

Numbers in parenthesis that are separated by a forward slash represent the number of facilities that reported use of MDP in each compliance year and tons of emissions based on MDP.

Most of the issues associated with CEMS certifications were resolved prior to Compliance Year 1999. Since then, very few facilities have had to submit emissions reports based on the worst case scenario under MDP, which may considerably overstate the actual emissions from major sources. As an example, most facilities that reported emissions using MDP in 1995 did so because they did not have their CEMS certified in time to report actual emissions. Since their CEMS had no prior data, MDP called for an application of the most conservative procedure to calculate substitute data by assuming continuous uncontrolled operation at the maximum rated capacity of the facility's equipment, regardless of the actual operational level during the missing data periods. As a result, the calculations yielded substitute data that may have been much higher than the actual emissions. In comparison to the 65 NOx facilities implementing MDP in Compliance Year 1995, 95 facilities reported NOx emissions using MDP in Compliance Year 2012. Even though this number of facilities is higher than in 1995, the percentage of emissions reported using MDP during Compliance Year 2012 is much lower than it was in 1995 (7.5% compared to 23%). Additionally, in terms of quantity, NOx emissions in Compliance Year 2012 were about 9% of those in Compliance Year 1995 (560 tons compared to 6,070 tons). Since most CEMS were certified and had been reporting actual emissions by the beginning of Compliance Year 2000, facilities that had to calculate substitute data were able to apply less conservative methods of calculating MDP for systems with high availability and shorter duration missing data periods. Therefore, the substitute data they calculated for their missing data periods were more likely to be representative of the actual emissions.

It is important to note that portions of annual emissions attributed to MDP include actual emissions from the sources as well as the possibility of overestimated emissions. As shown in Table 5-1, approximately 8% of reported NOx annual emissions were calculated using MDP in Compliance Year 2012. MDP may significantly overestimate emissions from some of the sources that operate intermittently and have low monitoring system availability, and/or lengthy missing data periods. Even though a portion of the 8% may be overestimated emissions due to conservative MDP, a significant portion (or possibly all) of it could have also been actual emissions from the sources. Unfortunately, the portion that represents the actual emissions cannot be readily estimated because the extent of this effect varies widely, depending on source categories and operating parameters, as well as the tier of MDP applied. As an example, refineries tend to operate at near maximum capacity for 24 hours per day and seven days per week, except for scheduled shutdowns for maintenance and barring major breakdowns or other unforeseeable circumstances. For Compliance Year 2012, a majority of NOx MDP emissions data (77%) and SOx MDP emissions data (97%) were reported by refineries. Therefore, missing data emissions calculated for such facilities could be more reflective of the actual emissions than those calculated for facilities that do not operate on a continuous basis but, due to low data availability, are required to calculate MDP based upon continuous operation.

Emissions Monitoring

Overview

The reproducibility of reported RECLAIM facility emissions—and thereby the enforceability of the RECLAIM program—is assured through a three-tiered hierarchy of MRR requirements. A facility’s equipment falls into an MRR category based on the kind of equipment it is and on the level of emissions produced or potentially produced by the equipment. RECLAIM divides all NOx sources into major sources, large sources, process units, and equipment exempt from obtaining a written permit pursuant to Rule 219. All SOx sources are divided into major sources, process units, and equipment exempt from obtaining a written permit pursuant to Rule 219. Table 5-2 shows the monitoring requirements applicable to each of these categories.

**Table 5-2
Monitoring Requirements for RECLAIM Sources**

| Source Category | Major Sources (NOx and SOx) | Large Sources (NOx only) | Process Units and Rule 219 Equipment (NOx and SOx) |
|---------------------|--|---|--|
| Monitoring Method | Continuous Emission Monitoring System (CEMS) | Fuel Meter or Continuous Process Monitoring System (CPMS) | Fuel Meter, Timer, or CPMS |
| Reporting Frequency | Daily | Monthly | Quarterly |

Continuous Emission Monitoring System (CEMS)

Requirements

CEMS represent both the most accurate and the most reliable method of calculating emissions because they continuously monitor all of the parameters necessary to directly determine mass emissions of NO_x and SO_x. They are also the most costly method. These attributes make CEMS the most appropriate method for the largest emission-potential equipment in the RECLAIM universe, major sources. Even though the number of major sources monitored by either CEMS or Alternative Continuous Emission Monitoring Systems (ACEMS) represent 18% and 62% of all permitted RECLAIM NO_x and SO_x sources, respectively, reported emissions for Compliance Year 2012 revealed that 76% of all RECLAIM NO_x emissions and 97% of all RECLAIM SO_x emissions were determined by CEMS or ACEMS.

ACEMS are alternatives to CEMS that are allowed under the RECLAIM regulation. These are devices that do not directly monitor NO_x or SO_x mass emissions; instead, they correlate multiple process parameters to arrive at mass emissions. To be approved for RECLAIM MRR purposes, ACEMS must be determined by the SCAQMD to be equivalent to CEMS in relative accuracy, reliability, reproducibility, and timeliness.

Compliance Status

By the end of calendar year 1999, almost all facilities that were required to have CEMS had their CEMS certified or provisionally approved. The only remaining uncertified CEMS are for sources that recently became subject to major source reporting requirements and sources that modified their CEMS. Typically, there will be a few new major sources each year. Therefore, there will continue to be a small number of CEMS in the certification process at any time.

Semiannual and Annual Assessments of CEMS

RECLAIM facilities conduct their Relative Accuracy Test Audit (RATA) of certified CEMS using private sector testing laboratories approved under the SCAQMD Laboratory Approval Program (LAP). These tests are conducted either semiannually or annually, depending on the most recent relative accuracy value (the sum of the average differences and the confidence coefficient) for each source. The interval is annual only when all required relative accuracies obtained during an audit are 7.5% or less (*i.e.*, more accurate).

To verify the quality of CEMS, the RATA report compares the CEMS data to data taken simultaneously, according to approved testing methods (also known as reference methods), by a LAP-approved source testing contractor. In order to have a passing RATA, each of the following relative accuracy performance criteria must be met: $\pm 20\%$ for pollutant concentration, $\pm 15\%$ for stack flow rate, and $\pm 20\%$ for pollutant mass emission rate. The RATAs also determine whether CEMS data must be adjusted for low readings compared to the reference method (bias adjustment factor), and by how much. The RATA presents two pieces of data, the CEMS bias (how much it differs from the reference method on the average) and the CEMS confidence coefficient (how variable that bias or average difference is).

Tables 5-3 and 5-4, respectively, summarize the 2012 and 2013 calendar years' passing rates for RATAs of certified CEMS for NO_x and SO_x concentration, total sulfur in fuel gas concentrations, stack flow rate (in-stack monitors and F-factor based calculations), and NO_x and SO_x mass emissions. However, the tables do not include SO_x mass emissions calculated from total sulfur analyzer systems because such systems serve numerous devices, and therefore are not suitable for mass emissions-based RATA testing.

Table 5-3
Passing Rates Based on RATAs of Certified CEMS in 2012¹

| Concentration | | | | | | Stack Flow Rate | | | | Mass Emissions | | | |
|-----------------|--------|-----------------|--------|---------------------------|--------|------------------|--------|----------------------|--------|-----------------|--------|------------------------------|--------|
| NO _x | | SO ₂ | | Total ² Sulfur | | In-Stack Monitor | | F-Factor Based Calc. | | NO _x | | SO _x ³ | |
| No. | % Pass | No. | % Pass | No. | % Pass | No. | % Pass | No. | % Pass | No. | % Pass | No. | % Pass |
| 336 | 100 | 84 | 100 | 14 | 100 | 42 | 100 | 341 | 100 | 336 | 100 | 53 | 100 |

1. About one percent of test audits were still submitted in paper form.
2. Includes Cylinder Gas Audit (CGA) tests.
3. Does not include SO_x emissions calculated from total sulfur analyzers.

Table 5-4
Passing Rates Based on RATAs of Certified CEMS in 2013¹

| Concentration | | | | | | Stack Flow Rate | | | | Mass Emissions | | | |
|-----------------|--------|-----------------|--------|---------------------------|--------|------------------|--------|----------------------|--------|-----------------|--------|------------------------------|--------|
| NO _x | | SO ₂ | | Total ² Sulfur | | In-Stack Monitor | | F-Factor Based Calc. | | NO _x | | SO _x ³ | |
| No. | % Pass | No. | % Pass | No. | % Pass | No. | % Pass | No. | % Pass | No. | % Pass | No. | % Pass |
| 338 | 100 | 89 | 100 | 14 | 100 | 42 | 100 | 348 | 100 | 338 | 100 | 49 | 100 |

1. All passing rates calculated from data submitted before January 10, 2014 and may exclude some data from the fourth quarter of calendar year 2013. About two percent of test audits were still submitted in paper form.
2. Includes Cylinder Gas Audit (CGA) tests.
3. Does not include SO_x emissions calculated from total sulfur analyzers.

As indicated in Tables 5-3 and 5-4, the passing rates for NO_x/SO₂ concentration, stack flow rate, and mass emissions were all 100%. Since the inception of RECLAIM there have been significant improvements with respect to the availability of reliable calibration gas, the reliability of the reference method, and an understanding of the factors that influence valid total sulfur analyzer data. RATA reports for all total sulfur analyzers during calendar years 2012 and 2013 have indicated passing results.

Electronic Data Reporting of RATA Results

Facilities operating CEMS under RECLAIM are required to submit RATA results to SCAQMD. An electronic reporting system, known as Electronic Data Reporting (EDR), was set up to allow RATA results to be submitted electronically using a standardized format in lieu of the traditional formal source test reports in paper form. This system minimizes the amount of material the facility must

submit to SCAQMD and also expedites reviews. Currently, most RATA results are submitted via this system.

Non-Major Source Monitoring, Reporting, and Recordkeeping

Emissions quantified for large sources are primarily based on concentration limits or emission rates specified in the Facility Permit. Other variables used in the calculation of large source emissions are dependent on the specific process of the equipment, but generally include fuel usage, applicable dry F-factor, and the higher heating value of the fuel used. RECLAIM requires large sources to be source tested within defined three-year windows in order to validate fuel meter accuracy, and the equipment's concentration limit or emission rate. Since emissions quantification is fuel-based, the monitoring equipment required to quantify emissions is a non-resettable fuel meter that must be corrected to standard temperature and pressure. Large source emission data must be submitted electronically on a monthly basis.

Process unit emission calculations are similar to those of large sources in that emissions are quantified using the fuel-based calculations for either a concentration limit or an emission factor specified in the Facility Permit. Similar to large sources, variables used in emission calculations for process units are dependent on the equipment's specific process, but generally include fuel usage, applicable dry F-factor, and the higher heating value of the fuel used. Process units that are permitted with concentration limits are also required to be source-tested, but within specified five-year windows. Emissions for equipment exempt from obtaining a written permit pursuant to Rule 219 are quantified using emission factors and fuel usage. No source testing is required for such exempt equipment. Since emissions are fuel-based for both process units and exempt equipment, the monitoring equipment required to quantify emissions is a non-resettable fuel meter, corrected to standard temperature and pressure. Alternately, a timer may be used to record operational time. In such cases, fuel usage is determined based on maximum rated capacity of the source. Process units and exempt equipment must submit emission reports electronically on a quarterly basis.

Emissions Reporting

Requirements

RECLAIM is designed to take advantage of electronic reporting technology to streamline reporting requirements for both facilities and SCAQMD, and to help automate compliance tracking. Under RECLAIM, facilities report their emissions electronically on a per device basis to SCAQMD's Central Station computer as follows:

- Major sources must use a Remote Terminal Unit (RTU) to telecommunicate emission data to the SCAQMD Central Station. The RTU collects data, performs calculations, generates the appropriate data files, and transmits the data to the Central Station. This entire process is required to be performed by the RTU without human intervention on a daily basis.

- Emission data for all equipment other than major sources may be transmitted via RTU or compiled manually and transmitted to the Central Station via modem. Alternatively, emissions from non-major sources may use the SCAQMD internet based application, Web Access To Electronic Reporting System (WATERS) to transmit emission data for non-major sources via internet connection. The data may be transmitted directly by the facility or through a third party.

Compliance Status

The main concern for emission reporting is the timely submittal of accurate daily emissions reports from major sources. If daily reports are not submitted by the specified deadlines, RECLAIM rules may require that emissions from CEMS be ignored and the emissions be calculated using MDP. Daily emission reports are submitted by the RTU of the CEMS to the SCAQMD Central Station via telephone lines. Often communication errors between the two points are not readily detectable by facility operators. Undetected errors can cause facility operators to believe that daily reports were submitted when they were not received by the Central Station. In addition to providing operators a means to confirm the receipt of their reports, the WATERS application can also display electronic reports that were submitted to, and received by, the Central Station. This system helps reduce instances where MDP must be used for late or missing daily reports, because the operators can verify that the Central Station received their daily reports, and can resubmit them if there were communication errors.

Protocol Review

Even though review of MRR protocols was only required by Rule 2015(b)(1) for the first three compliance years of the RECLAIM program, staff continues to review the effectiveness of enforcement and MRR protocols. Based on such review, occasional revisions to the protocols may be needed to achieve improved measurement and enforcement of RECLAIM emission reductions, while minimizing administrative costs to SCAQMD and RECLAIM participants.

Since the RECLAIM program was adopted, staff has produced rule interpretations and implementation guidance documents to clarify and resolve specific concerns about the protocols raised by RECLAIM participants. In situations where staff could not interpret existing rule requirements to adequately address the issues at hand, the protocols and/or rules have been amended.

Finally, when the RECLAIM program first began, the ability to electronically transmit emissions data to SCAQMD's Central Station via modem was considered state-of-the-art technology. However, that technology is now antiquated and finding replacement components (*e.g.*, slower baud-rate modems) is becoming increasingly difficult. As such, SCAQMD is evaluating options to either upgrading or replacing the current Central Station. Key factors being considered include ease of implementation and cost impacts on RECLAIM facilities and SCAQMD. Progress on this effort will be presented in future annual program audit reports.

CHAPTER 6 REPORTED JOB IMPACTS

Summary

This chapter compiles data as reported by RECLAIM facilities in their Annual Permit Emissions Program (APEP) reports. The analysis focuses exclusively on job impacts at RECLAIM facilities and determination if those job impacts were directly attributable to RECLAIM as reported by those facilities. There may be additional effects of the RECLAIM program on the local economy outside of RECLAIM facilities (e.g., generating jobs for consulting firms, source testing firms and CEMS vendors) and also factors other than RECLAIM (e.g., the prevailing economic climate), that impact the job market. These factors are not evaluated in this report. Also job losses and job gains are strictly based on RECLAIM facilities' reported information. AQMD is not able to independently verify the reported job impacts information.

According to the Compliance Year 2012 employment survey data gathered from APEP reports, RECLAIM facilities reported a net gain of 2,026 jobs, representing 2% of their total employment. All of the facilities that reported job losses and job gains cited factors other than RECLAIM as the reasons for these changes in employment figures. Furthermore, none of the five RECLAIM facilities listed as shutdown during Compliance Year 2012 cited RECLAIM as a factor contributing to the decision to shutdown.

Background

The APEP reports submitted by RECLAIM facilities include survey forms that are used to evaluate the socioeconomic impacts of the program. Facilities were asked to indicate on the forms the number of jobs at the beginning of Compliance Year 2012 and any changes in the number of jobs that took place during the compliance year in each of three categories: manufacturing, sale of products, and non-manufacturing. The numbers of jobs gained and lost reported by facilities in each category during the compliance year were tabulated.

Additionally, APEP reports ask facilities that shut down during Compliance Year 2012 to provide the reasons for their closure. APEP reports also allow facilities to indicate whether the RECLAIM program led to the creation or elimination of jobs during Compliance Year 2012. Those facilities that reported a change in the number of jobs due to RECLAIM were asked to specify the number of jobs lost or gained, and to state why the job loss or creation was attributed to RECLAIM.

Since data regarding job impacts and facility shutdowns are derived from the APEP reports, the submittal of these reports is essential to assessing the influence that the RECLAIM program has on these issues. The following discussion represents data obtained from APEP reports submitted to SCAQMD for Compliance Year 2012 and clarifying information collected by SCAQMD staff. SCAQMD staff is not able to verify the accuracy of the reported job impacts information.

Job Impacts

Table 6-1 summarizes job impact data gathered from Compliance Year 2012 APEP reports and follow-up contacts with facilities. A total of 123 facilities reported 11,856 job gains, while 129 facilities reported a total of 9,830 job losses. Net job gains were reported in two of the three categories: sales of products (19), and non-manufacturing (2,604), whereas net job losses were reported in the remaining category: manufacturing (597). Table 6-1 shows a total net gain of 2,026 jobs, which represents a net jobs increase of 2% at RECLAIM facilities during Compliance Year 2012.

Table 6-1
Job Impacts at RECLAIM Facilities for Compliance Year 2012

| Description | Manufacture | Sales of Products | Non-Manufacture | Total ¹ |
|--|---------------|-------------------|-----------------|--------------------|
| Initial Jobs | 39,983 | 863 | 62,542 | 103,388 |
| Overall Job Gain | 3,163 | 128 | 8,565 | 11,856 |
| Overall Job Loss | 3,760 | 109 | 5,961 | 9,830 |
| Final Jobs | 39,386 | 882 | 65,146 | 105,414 |
| Net Job Change | -597 | 19 | 2,604 | 2,026 |
| Percent (%) Job Change | -1.49% | 2.20% | 4.16% | 1.96% |
| Facilities Reporting Job Gains | 86 | 23 | 75 | 123 |
| Facilities Reporting Job Losses | 91 | 30 | 81 | 129 |

¹ The total number of facilities reporting job gains or losses does not equal the sum of the number of facilities reporting job changes in each category (*i.e.*, the manufacture, sales of products, and non-manufacture categories) due to the fact that some facilities may report changes under more than one of these categories.

Data in Table 6-1 include five RECLAIM facilities that were reported to be shut down or ceasing operations in Compliance Year 2012 as listed in Appendix C. One of the shutdown facilities was sold to, and became part of, an adjacent university which is exempt from RECLAIM pursuant to Rule 2001(i)(2)(H). Since the university did not file for a Change of Operator, the original facility is considered shutdown. In the case of the second facility, its operations were consolidated to a new plant in Tennessee. The third facility, a power plant, was shut down as air quality mitigation for another new power plant in the SCAQMD. The last two facilities were shut down because the operations at those facilities were each consolidated at other facilities in the SCAQMD. None of the shutdown facilities attributed job gains or losses to RECLAIM in Compliance Year 2012 (refer to Appendix E).

As with the shutdown facilities described above, none of the RECLAIM facilities that remain in operation attributed any job gains or losses to RECLAIM for Compliance Year 2012. It should also be noted that based on the past few years of data collected from RECLAIM facilities, the job gains or losses attributed only to RECLAIM comprise a very small percentage (less than 2%) of the total number of jobs lost or gained in that period.

The analysis in this report only considers job gains and losses at RECLAIM facilities. It should be noted that this analysis of socioeconomic impacts based on APEP reports and follow-up interviews is focused exclusively on changes in

employment that occurred at RECLAIM facilities. The effect of the program on the local economy outside of RECLAIM facilities, including consulting and source testing jobs, is not considered.

It is not possible to compare the impact of the RECLAIM program on the job market *vis-à-vis* a scenario without RECLAIM. This is because factors other than RECLAIM (*e.g.*, the prevailing economic climate), also impact the job market. Furthermore, there is no way to compare job impacts attributed to RECLAIM to job impacts attributed to command-and-control rules that would have been adopted in RECLAIM's absence, because these command-and-control rules do not exist. As mentioned previously, the effect of the RECLAIM program on the local economy outside of RECLAIM facilities (*e.g.*, generating jobs for consulting firms, source testing firms and CEMS vendors) is also not considered in this report.

CHAPTER 7

AIR QUALITY AND PUBLIC HEALTH IMPACTS

Summary

Audited RECLAIM emissions have been in an overall downward trend since the program's inception. Compliance Year 2012 NO_x emissions increased slightly (7.0%) relative to Compliance Year 2011 and Compliance Year 2012 SO_x emissions were 6.4% less when compared to last year. Quarterly calendar year 2012 NO_x emissions fluctuated within four percent of the mean NO_x emissions for the year. Quarterly calendar year 2012 SO_x emissions fluctuated within ten percent of the year's mean SO_x emissions. There was no significant shift in seasonal emissions from the winter season to the summer season.

The California Clean Air Act (CCAA) required a 50% reduction in population exposure to ozone, relative to a baseline averaged over three years (1986 through 1988), by December 31, 2000. The Basin achieved the December 2000 target for ozone well before the deadline. In calendar year 2013, the per capita exposure to ozone (the average length of time each person is exposed) continued to be well below the target set for December 2000.

Air toxic health risk is primarily caused by emissions of certain volatile organic compounds (VOCs) and fine particulates, such as metals. RECLAIM facilities are subject to the same air toxic, VOC, and particulate matter regulations as other sources in the Basin. All sources are subject, where appropriate, to the NSR rule for toxics (Rule 1401). In addition, new or modified sources with NO_x or SO_x emission increases are required to be equipped with BACT, which minimizes to the extent feasible the increase of NO_x and SO_x emissions. RECLAIM and non-RECLAIM facilities that emit toxic air contaminants are required to report those emissions to SCAQMD. Those toxics emissions reports are used to identify candidates for the Toxics Hot Spots program (AB2588), which in turn quantifies toxic risk from facilities in the program and identifies those facilities that are required to do public notice and/or reduce their health risk levels to the public. There is no evidence that RECLAIM has caused or allowed higher toxic risk in areas adjacent to RECLAIM facilities.

Background

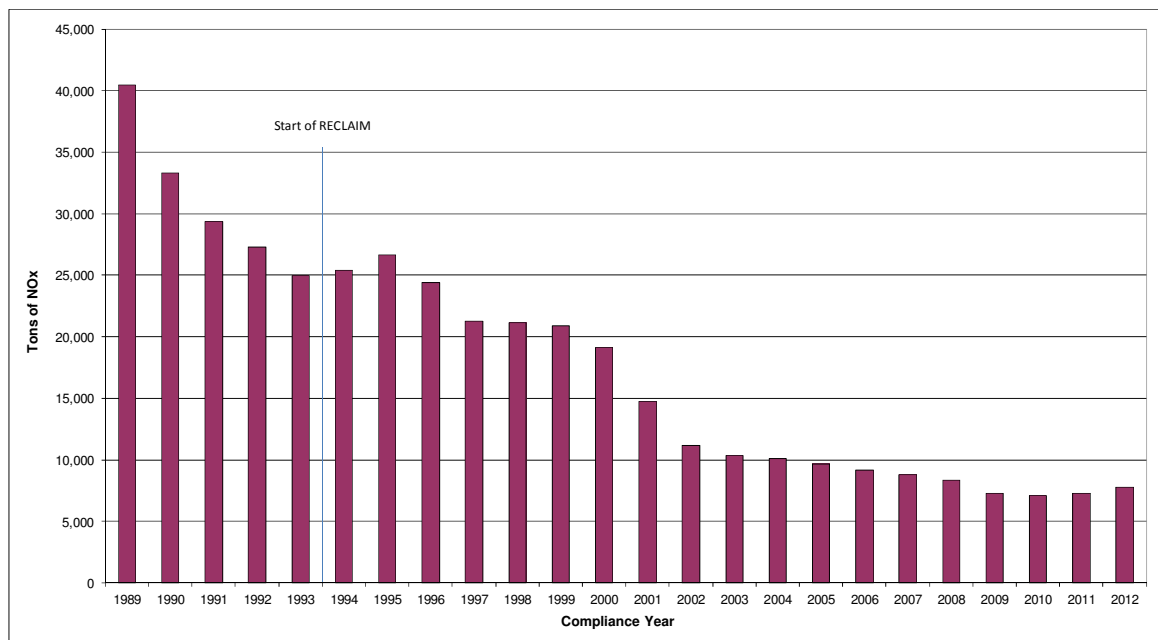
RECLAIM is designed to achieve the same, or higher level of, benefits in terms of air quality and public health as would have been achieved from implementation of the control measures and command-and-control rules that RECLAIM subsumed. Therefore, as a part of each annual program audit, SCAQMD evaluates per capita exposure to air pollution, toxic risk reductions, emission trends, and seasonal fluctuations in emissions. SCAQMD also generates quarterly emissions maps depicting the geographic distribution of RECLAIM emissions. As mentioned in last year's annual report, these maps are generated and posted quarterly on SCAQMD's webpage (http://www.aqmd.gov/reclaim/Qtrly_Maps.htm) including all quarterly emissions maps presented in previous annual program audit reports. This chapter addresses:

- Emission trends for RECLAIM facilities;
- Seasonal fluctuations in emissions;
- Per capita exposure to air pollution; and
- Toxics impacts.

Emission Trends for RECLAIM Sources

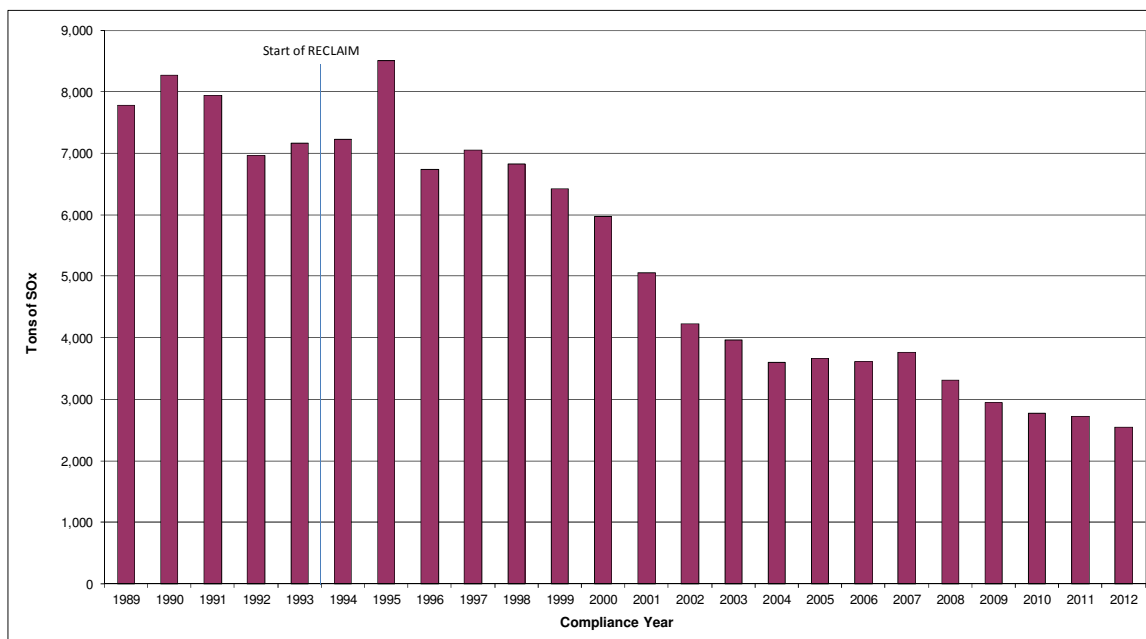
Concerns were expressed during program development that RECLAIM might cause sources to increase their aggregate emissions during the early years of the program due to perceived over-allocation of emissions. In Figures 7-1 and 7-2, which show NOx and SOx emissions from RECLAIM sources since 1989, the analysis of emissions from RECLAIM sources indicates that overall, RECLAIM emissions have been in a downward trend since program inception and the concerns on emission increase during early years of RECLAIM did not materialize.

Figure 7-1
NOx Emission Trend for RECLAIM Sources



Note: 1989-1993 emissions presented in this figure are the emissions from the facilities in the 1994 NOx universe.

Figure 7-2
SOx Emission Trend for RECLAIM Sources



Note: 1989-1993 emissions presented in this figure are the emissions from the facilities in the 1994 SOx universe.

NOx emissions decreased every year since Compliance Year 1995 through Compliance Year 2010. Then for Compliance Year 2011 as well as this compliance year, NOx emissions increased slightly each year but were still much lower than the programmatic goal as shown in Table and Figure 3-1. Since Compliance Year 1995, annual SOx emissions have also followed a general downward trend, except for slight increases in Compliance Years 1997, 2005, and 2007 compared to each respective previous compliance year. SOx emissions continued to decrease in Compliance Year 2012 when compared to the previous compliance year.

The increase in NOx and SOx emissions from Compliance Year 1994 to 1995 can be attributed to the application of MDP at the onset of RECLAIM implementation. RECLAIM provides for emissions from each major source’s first year in the program to be quantified using an emission factor and fuel throughput (interim reporting) while they certify their CEMS. However, at the beginning of the program (Compliance Year 1994), many facilities had difficulties certifying their CEMS within this time frame, and consequently reported their Compliance Year 1995 emissions using MDP. As discussed in Chapter 5, since CEMS for these major sources had no prior data, MDP required the application of the most conservative procedure to calculate substitute data. As a result, the application of MDP during this time period yielded substitute data that may have been much higher than the actual emissions. In addition, emissions after Compliance Year 1995 decreased steadily through 2000. Thus, RECLAIM facilities did not increase their aggregate emissions during the earlier years of the program.

Seasonal Fluctuation in Emissions for RECLAIM Sources

During program development, another concern was that RECLAIM might cause facilities to shift emissions from the winter season into the summer ozone season since RECLAIM emission goals are structured on an annual basis, thus exacerbating poor summer air quality. To address this concern, “seasonal fluctuations” were added as part of the required analysis. Accordingly, SCAQMD staff performed a two-part analysis of the quarterly variation in RECLAIM emissions:

1. In the first part, staff qualitatively compared the quarterly variation in Compliance Year 2012 RECLAIM emissions to the quarterly variation in emissions from the same universe of sources prior to the implementation of RECLAIM.
2. In the second part, staff analyzed quarterly audited emissions during calendar year 2012 and compared them with quarterly audited emissions for prior years to assess if there had been such a shift in emissions. This analysis is reflected in Figures 7-3, 7-4, 7-5, and 7-6.¹

Quarterly emissions data from the facilities in RECLAIM before they were in the program is not available. Therefore, a quantitative comparison of the seasonal variation of emissions from these facilities while operating under RECLAIM with their seasonal emissions variation prior to RECLAIM is not feasible. However, a qualitative comparison has been conducted, as follows:

- NO_x emissions from RECLAIM facilities are dominated by refineries and power plants.
- SO_x emissions from RECLAIM facilities are especially dominated by refineries.
- Prior to RECLAIM, refinery production was generally highest in the summer months because more people travel during summer; thus, increasing demand for gasoline and other transportation fuels.
- Electricity generation prior to RECLAIM was generally highest in the summer months because of increased demand for electricity to drive air conditioning units.

Emissions from refineries (NO_x and SO_x) and from power plants (NO_x) are typically higher in the summer months, which was the trend prior to implementation of RECLAIM. Therefore, provided a year’s summer quarter RECLAIM emissions do not exceed that year’s quarterly average emissions by a substantial amount, it can be concluded that, for that year, RECLAIM has not resulted in a shift of emissions to the summer months relative to the pre-RECLAIM emission pattern.

Summer (third quarter) 2012 RECLAIM NO_x and SO_x emissions exceed the 2012 quarterly average emissions by about three percent and seven percent, respectively. Based on the foregoing logic, it is clear that these small seasonal fluctuations in RECLAIM emissions are consistent with pre-RECLAIM emissions from the same universe of sources. Therefore, RECLAIM did not cause a shift in

¹ Data used to generate these figures were derived from audited data. Similar figures for calendar years 1994 through 2007 in previous annual reports were generated from a combination of audited and reported data available at the time the reports were written.

emissions to the summer months relative to the pre-RECLAIM emissions patterns.

Figure 7-3 shows the 2012 mean quarterly NOx emissions, which is the average of the four quarterly aggregate emissions, and the 2012 actual quarterly emissions and Figure 7-4 compares the 2012 quarterly NOx emissions with the quarterly emissions from 2002 through 2011. During calendar year 2012, aggregate quarterly NOx emissions varied from less than three percent below the mean in the first quarter (January through March) to about three percent above the mean in the third quarter (July through September). Figure 7-4 shows that the fourth quarter of 2012 had the lowest aggregate RECLAIM NOx emission totals of any quarter since the program began in 1994. Figures 7-3 and 7-4, together, show that the RECLAIM program has not caused a significant shift in NOx emissions from the winter season into the summer season in recent years relative to early years of the program.

Figure 7-3
Calendar Year 2012 NOx Quarterly Emissions

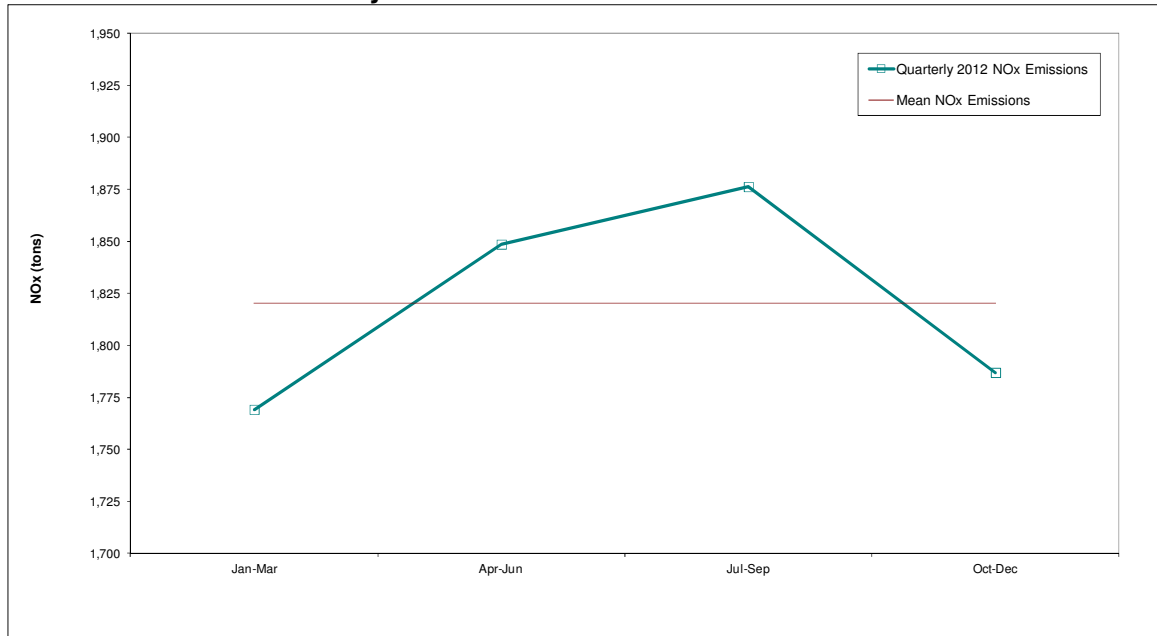


Figure 7-4
Quarterly NOx Emissions from Calendar Years 2002 through 2012

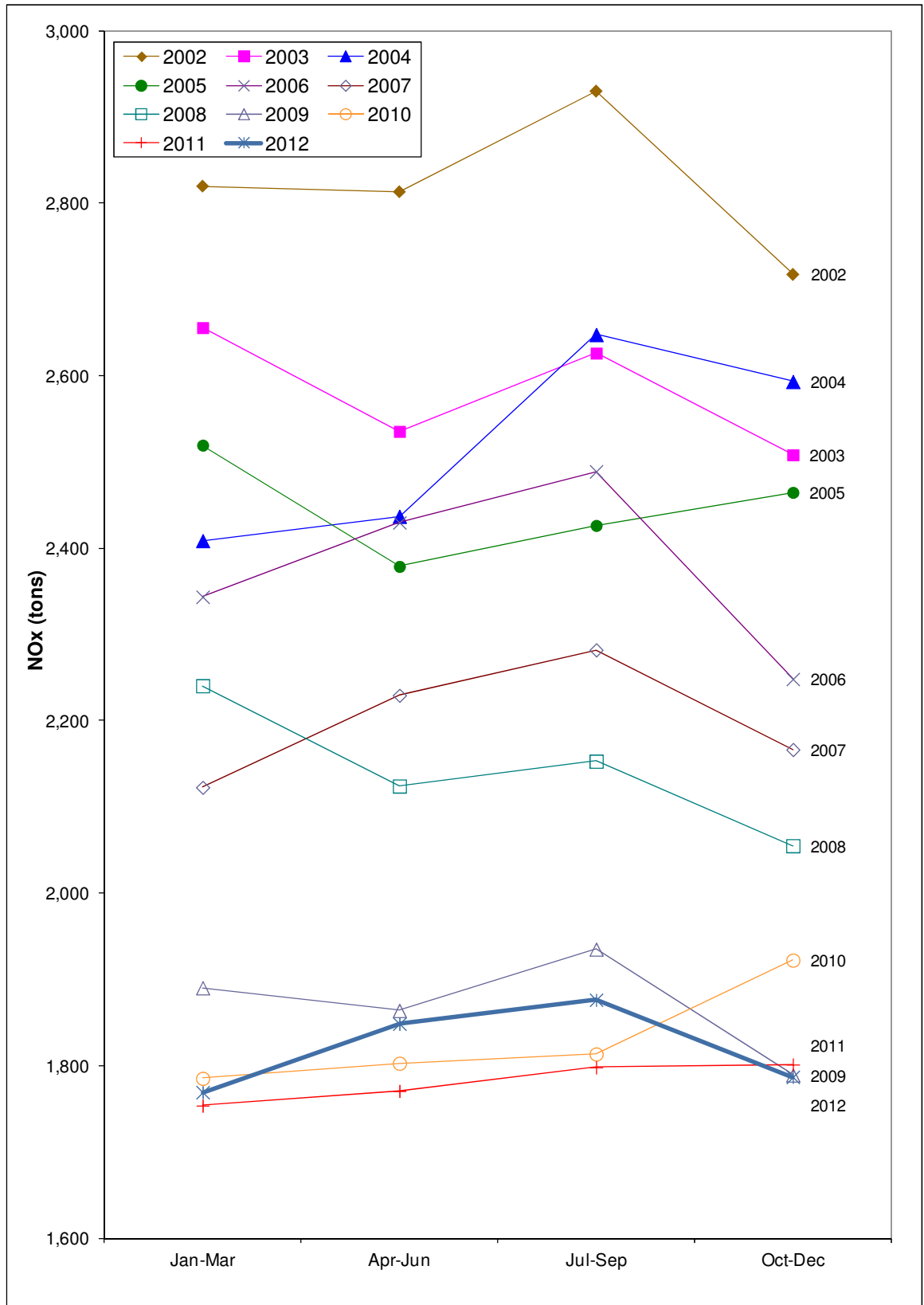


Figure 7-5 presents the 2012 mean quarterly SOx emissions and the 2012 actual quarterly emissions and Figure 7-6 compares the 2012 quarterly SOx emissions with the quarterly emissions from 2002 through 2011. Figure 7-5 shows that quarterly SOx emissions during calendar year 2012 varied from seven percent above the mean in the third quarter (July through September) to nine percent below the mean in the fourth quarter (October through December). Figure 7-6 reveals that the 2012 quarterly aggregate SOx emissions profile was similar to those for previous years and that the first, third, and fourth quarters of 2012 had lower aggregate emissions than the corresponding quarters of any prior year since the program began in 1994.

The decline in SOx emissions from the third quarter to the fourth quarter in Figure 7-5 can be attributed to three facilities. One refinery underwent a turnaround of their sulfur recovery unit (SRU) and pre-treater in July 2012 which increased SOx concentrations during the third quarter; thus increasing third quarter emissions over their normal operation levels. Another refinery added a new SRU with low SOx emissions while reducing the loads of three other SRUs during the fourth quarter. Additionally, a third facility added a wet scrubber in the fourth quarter which greatly reduced fourth quarter emissions. These occurrences led to greater than normal third quarter emissions and lower than normal fourth quarter emissions which explain the decline from third quarter to fourth quarter emissions.

This analysis shows that the RECLAIM program has not caused a significant shift in SOx emissions from the winter season into the summer season in recent years relative to early years of the program and that the calendar year 2012 seasonal emissions profile was similar to the corresponding profiles for other recent years.

Figure 7-5
Calendar Year 2012 SOx Quarterly Emissions

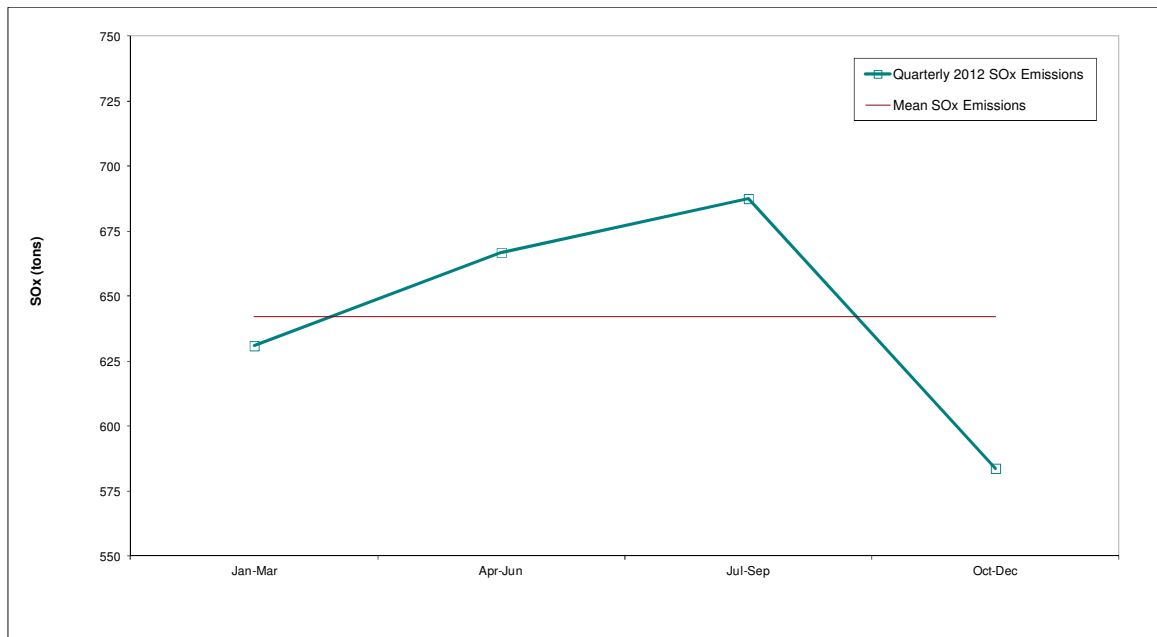
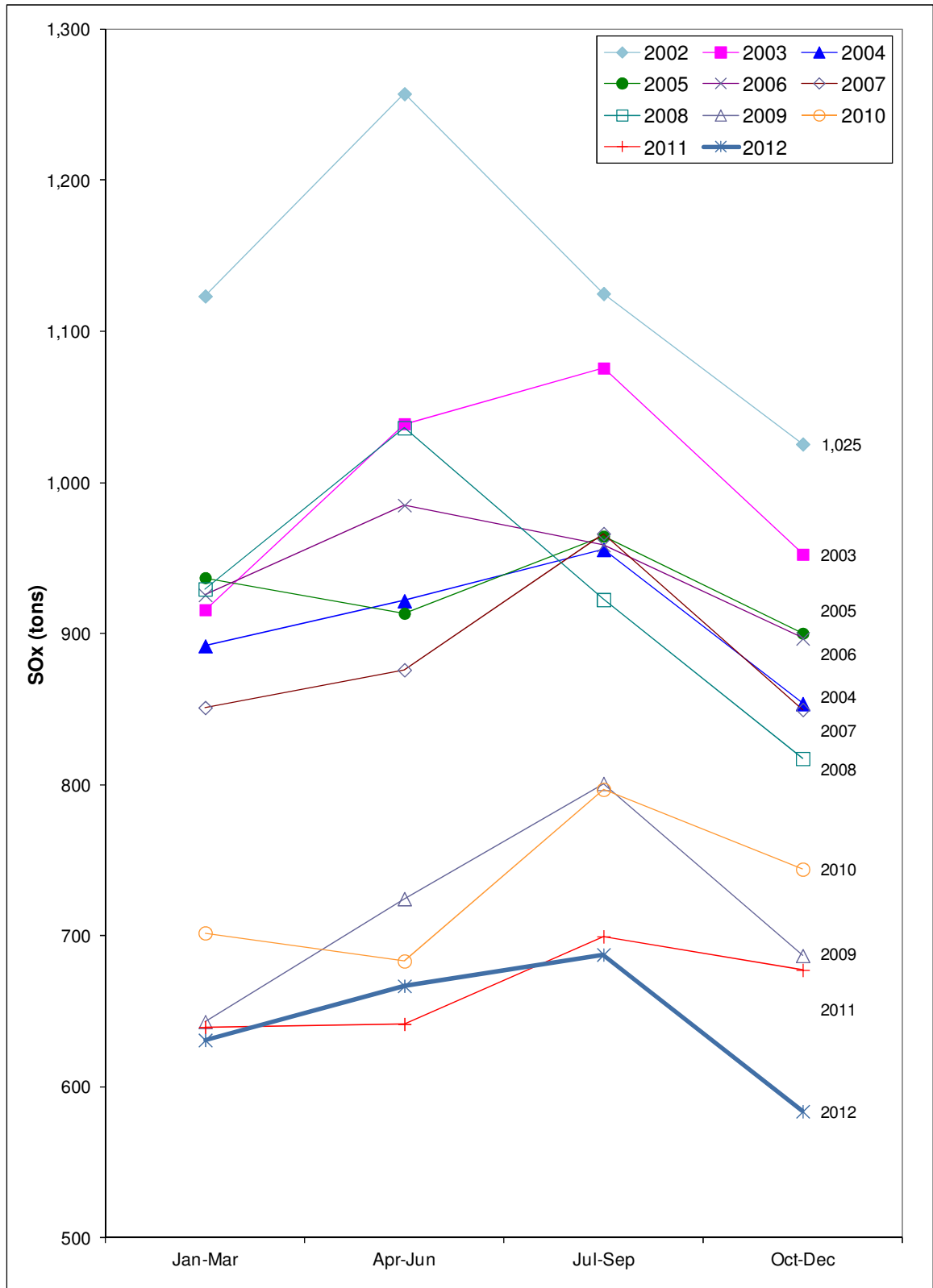


Figure 7-6
Quarterly SOx Emissions from Calendar Years 2002 through 2012



Per Capita Exposure to Pollution

The predicted effects of RECLAIM on air quality and public health were thoroughly analyzed through modeling during program development. The results were compared to projected impacts from continuing traditional command-and-control regulations and implementing control measures in the 1991 AQMP. One of the criteria examined in the analysis was per capita population exposure.

Per capita population exposure reflects the length of time each person is exposed to unhealthful air quality. The modeling performed in the program development analysis projected that the reductions in per capita exposure under RECLAIM in calendar year 1994 would be nearly identical to the reductions projected for implementation of the control measures in the 1991 AQMP, and the reductions resulting from RECLAIM would be greater in calendar years 1997 and 2000. As reported in previous annual reports, actual per capita exposures to ozone for 1994 and 1997 were below the projections.

As part of the Children's Environmental Health Protection Act that was passed in 1999, and in consultation with the Office of Environmental Health Hazard Assessment, CARB is to "review all existing health-based ambient air quality standards to determine whether these standards protect public health, including infants and children, with an adequate margin of safety." As a result of that requirement, CARB adopted a new 8-hour ozone standard (0.070 ppm), which became effective May 17, 2006, in addition to the 1-hour ozone standard (0.09 ppm) already in place. Table 7-1 shows the number of days that both the new state 8-hour ozone standard of 0.070 ppm and the 1-hour standard of 0.09 ppm were exceeded.

In July 1997, the USEPA established a new ozone National Ambient Air Quality Standard (NAAQS) of 0.085 ppm based on an 8-hour average measurement. As part of the Phase I implementation that was finalized in June 2004, the federal 1-hour ozone standard (0.12 ppm) was revoked effective June 2005. Effective May 27, 2008, the 8-hour NAAQS ozone standard was reduced to 0.075 ppm. Table 7-1 shows monitoring results based on this revised 8-hour federal standard.

Table 7-1 summarizes ozone data for calendar years 2001 through 2013 in terms of the number of days that exceeded the state and federal ambient ozone standards and the Basin's maximum concentration in each calendar year. This table shows that the number of days that exceeded the state and federal ambient ozone standards from calendar year 2012 to 2013 decreased back to 2011 levels; however, the Basin's maximum ozone concentrations, based on both the 1-hour and 8-hour averaging periods, increased slightly over the same period. Although the Basin's maximum ozone concentrations did increase, the changes were small and both concentrations are similar to the average of the corresponding maximum concentrations for 2010 through 2012.

Table 7-1
Summary of Ozone Data

| Year | Days exceeding state 1-hour standard (0.09 ppm) | Days exceeding state new 8-hour standard (0.07 ppm) | Days exceeding federal 8-hour standard (0.075 ppm) | Basin Maximum 1-hour ozone concentration (ppm) | Basin Maximum 8-hour ozone concentration (ppm) |
|-------|---|---|--|--|--|
| 2001 | 121 | 156 | 132 | 0.191 | 0.146 |
| 2002 | 118 | 149 | 135 | 0.169 | 0.148 |
| 2003 | 133 | 161 | 141 | 0.216 | 0.200 |
| 2004 | 110 | 161 | 126 | 0.163 | 0.148 |
| 2005 | 111 | 142 | 116 | 0.163 | 0.145 |
| 2006 | 102 | 121 | 114 | 0.175 | 0.142 |
| 2007 | 99 | 128 | 108 | 0.171 | 0.137 |
| 2008 | 98 | 136 | 121 | 0.176 | 0.131 |
| 2009 | 100 | 131 | 113 | 0.176 | 0.128 |
| 2010 | 83 | 128 | 109 | 0.143 | 0.123 |
| 2011 | 94 | 127 | 107 | 0.160 | 0.136 |
| 2012* | 97 | 140 | 111 | 0.147 | 0.112 |
| 2013 | 92 | 123 | 106 | 0.151 | 0.122 |

* After finalizing the Annual RECLAIM Audit Report for 2011 Compliance Year, the 2012 ozone data decreased slightly from previously reported values. The 2012 ozone data has been revised to reflect the updated changes. However, these changes did not alter the trends stated in the 2011 RECLAIM Report.

The CCAA, which was enacted in 1988, established targets for reducing overall population exposure to severe non-attainment pollutants in the Basin—a 25% reduction by December 31, 1994, a 40% reduction by December 31, 1997, and a 50% reduction by December 31, 2000 relative to a calendar years 1986-88 baseline. These targets are based on the number of hours on average a person is exposed (“per capita exposure”²) to ozone above the state 1-hour standard of 0.09 ppm. Table 7-2 shows the 1986-88 baseline, the actual per capita exposures each year since 1994 (RECLAIM’s initial year), and the 1997 and 2000 targets set by the CCAA for each of the four counties in the district and the Basin overall. As shown in Table 7-2, the CCAA reduction targets were achieved as early as 1994 (actual 1994 Basin per capita exposure was 37.6 hours, which is below the 2000 target of 40.2 hours). The per capita exposure continues to remain much lower than the CCAA targets since RECLAIM started in 1994. For calendar year 2013, the actual per capita exposure for the Basin was 1.314 hours, which represents a 98.4% reduction from the 1986-88 baseline level.

² SCAQMD staff divides the air basin into a grid of square cells and interpolates recorded ozone data from ambient air quality monitors to determine ozone levels experienced in each of these cells. The total person-hours in a county experiencing ozone higher than the state ozone standard is determined by summing over the whole county the products of the number of hours exceeding the state ozone standard per grid cell with the number of residents in the corresponding cell. The per capita ozone exposures are then calculated by dividing the sum of person-hours by the total population within a county. Similar calculations are used to determine the Basin-wide per capita exposure by summing and dividing over the whole Basin.

Table 7-2
Per Capita Exposure to Ozone above the State One-Hour Standard of 0.09 ppm (hours)

| Calendar Year | Basin | Los Angeles | Orange | Riverside | San Bernardino |
|-------------------------------|-------|-------------|--------|-----------|----------------|
| 1986-88 baseline ¹ | 80.5 | 75.8 | 27.2 | 94.1 | 192.6 |
| 1994 actual | 37.6 | 26.5 | 9 | 71.1 | 124.9 |
| 1995 actual | 27.7 | 20 | 5.7 | 48.8 | 91.9 |
| 1996 actual | 20.3 | 13.2 | 4 | 42.8 | 70 |
| 1997 actual | 5.9 | 3 | 0.6 | 13.9 | 24.5 |
| 1998 actual | 12.1 | 7.9 | 3.1 | 25.2 | 40.2 |
| 2000 actual | 3.8 | 2.6 | 0.7 | 8.5 | 11.4 |
| 2001 actual | 1.73 | 0.88 | 0.15 | 6 | 5.68 |
| 2002 actual | 3.87 | 2.16 | 0.13 | 11.12 | 12.59 |
| 2003 actual | 10.92 | 6.3 | 0.88 | 20.98 | 40.21 |
| 2004 actual | 3.68 | 2.26 | 0.50 | 6.82 | 12.34 |
| 2005 actual | 3.11 | 1.43 | 0.03 | 6.06 | 12.54 |
| 2006 actual | 4.56 | 3.08 | 0.68 | 8.02 | 13.30 |
| 2007 actual | 2.90 | 1.50 | 0.35 | 4.65 | 10.53 |
| 2008 actual | 4.14 | 2.04 | 0.26 | 7.50 | 14.71 |
| 2009 actual | 2.872 | 1.538 | 0.078 | 3.884 | 10.539 |
| 2010 actual | 1.184 | 0.377 | 0.107 | 2.451 | 4.476 |
| 2011 actual | 2.099 | 0.848 | 0.015 | 3.456 | 8.125 |
| 2012 actual | 2.366 | 1.050 | 0.050 | 2.587 | 9.776 |
| 2013 actual | 1.314 | 0.519 | 0.067 | 1.609 | 5.497 |
| 1997 target ² | 48.3 | 45.5 | 16.3 | 56.5 | 115.6 |
| 2000 target ³ | 40.2 | 37.9 | 13.6 | 47 | 96.3 |

¹ Average over three years, 1986 through 1988.

² 60% of the 1986-88 baseline exposures.

³ 50% of the 1986-88 baseline exposures.

Table 7-2 shows that actual per capita exposures during all the years mentioned were well under the 1997 and 2000 target exposures limits. It should also be noted that air quality in the Basin is a complex function of meteorological conditions and an array of different emission sources, including mobile, area, RECLAIM stationary sources, and non-RECLAIM stationary sources. Therefore, the reduction of per capita exposure beyond the projected level is not necessarily attributable to implementation of the RECLAIM program in lieu of the command-and-control regulations.

Toxic Impacts

Based on a comprehensive toxic impact analysis performed during program development, it was concluded that RECLAIM would not result in any significant impacts on air toxic emissions. Nevertheless, to ensure that the implementation of RECLAIM does not result in adverse toxic impacts, each annual program audit is required to assess any increase in the public health exposure to air toxics potentially caused by RECLAIM.

One of the safeguards to ensure that the implementation of RECLAIM does not result in adverse air toxic health impacts is that RECLAIM sources are subject to

the same air toxic statutes and regulations (e.g., SCAQMD Regulation XIV, State AB 2588, State Air Toxics Control Measures, Federal National Emissions Standards for Hazardous Air Pollutants, etc.) as other sources in the Basin. Additionally, air toxic health risk is primarily caused by emissions of VOCs and fine particulates such as certain metals. VOC sources at RECLAIM facilities are subject to source-specific command-and-control rules the same way these rules apply to non-RECLAIM facilities, in addition to the toxics requirements described above. Sources of fine particulates and toxic metal emissions are also subject to the above-identified regulations pertaining to toxic emissions. Moreover, new or modified RECLAIM sources with NO_x or SO_x emission increases are also required to be equipped with BACT, which minimizes to the best extent feasible NO_x and SO_x emissions.

Under the AER program, facilities that have the potential to emit: 1) four tons per year or more of VOC, NO_x, SO_x, or PM, or 100 tons per year or more of CO; or 2) any one of 24 toxic air contaminants (TACs) and ozone depleting compounds (ODCs) emitted above specific thresholds (Rule 301 Table IV), are required to report their emissions annually to the SCAQMD. Beginning with the FY 2000-01 reporting cycle, toxics emission reporting for the AB2588 Program was incorporated into the SCAQMD's AER Program. The data collected in the AER program is used to determine which facilities will be required to take further actions under the AB2588 Hot Spots Program.

Facilities in the AB2588 Program are required to submit a comprehensive toxics inventory, which is then prioritized using Board-approved procedures (see SCAQMD website at http://www.aqmd.gov/prdas/AB2588/AB2588_B2.html) into one of three categories: low, intermediate, or high priority. Facilities ranked with low priority are exempt from future reporting. Facilities ranked with intermediate priority are classified as District tracking facilities, which are then required to submit a complete toxics inventory once every four years (or quadrennially). In addition to reporting their toxic emissions quadrennially, facilities designated as high priority are required to submit a health risk assessment (HRA) to determine their impacts to the surrounding community. As of April 2013, SCAQMD staff has reviewed and approved 306 facility HRAs. About 95 percent of the facilities have cancer risks below 10 in a million and over 98 percent of the facilities have acute and chronic non-cancer hazard indices less than 1.

Facilities with cancer risks above 10 in a million or a non-cancer hazard index above 1 are required by AB2588 to conduct a public notice and SCAQMD holds a public meeting to discuss their health risk. To date, the SCAQMD has conducted 47 such public notification meetings for the AB2588 Program.

The Board also established the following action risk levels in Rule 1402: Cancer burden of 0.5, a cancer risk of 25 in a million, and a hazard index of 3.0. Facilities above any of the action risk levels must reduce their risks below the action risk levels within three years. According to the SCAQMD's 2012 Annual Report on AB 2588 Air Toxics "Hot Spots" program³, 21 facilities were required to reduce risks and all of these facilities have reduced risks well below the action

³ Data and descriptions about the AB2588 Program were taken from the SCAQMD's April 2013 Annual Report on AB 2588 Air Toxics "Hot Spots" Program.
http://www.aqmd.gov/prdas/AB2588/pdf/Annual_Report_2012.pdf

risk levels mandated by Rule 1402⁴.

Finally, the SCAQMD staff conducts Multiple Air Toxic Exposure Studies (MATES) periodically to assess cumulative air toxic impacts to the residents and workers of southern California. These studies also help document progress in reducing toxic impacts. The third version of MATES (*i.e.*, MATES III) was conducted over a two year period from April 2004 to March 2006. Monitoring conducted at that time indicated resident and worker exposure to 1,3-butadiene, benzene, perchloroethylene, and methylene chloride was reduced by 50 percent or more since MATES II (conducted from April 1998 to March 1999) and exposure to formaldehyde and acetaldehyde was reduced by 9 percent. Exposure to toxic metals, such as arsenic, cadmium, lead, and nickel, was reduced by over 25 percent from the levels observed in MATES II. Field monitoring for MATES IV was completed in June 2013 and analysis of that data is currently underway.

There have been concerns voiced regarding the potential that trading of RTCs can allow for higher production at a RECLAIM facility which may indirectly cause higher secondary emissions of toxic air contaminants, and thereby, make the health risk in the vicinity of the facility worse. If any facility significantly experiences such circumstances, the above described requirements related to toxic emissions under the AB2588 program and/or Rule 1402 would be triggered and the appropriate risk reduction measures would be required. Also, based on the results of recent MATES studies, the region-wide cumulative air toxic impacts on residents and workers in Southern California have been declining. Nonetheless, air toxic risk did increase in a few areas and, in particular, for those living near the San Pedro Bay ports between 1997 and 2005, those risk increases can be primarily attributed to goods movement related sources that are not part of RECLAIM. Therefore, staff has not found any evidence that would suggest that the substitution of NO_x and SO_x RECLAIM for the command-and-control rules and the measures RECLAIM subsumes caused a significant increase in public exposure to air toxic emissions relative to what would have happened if the RECLAIM program was not implemented. Staff will continue to monitor and assess toxic impacts as part of future annual program audits.

⁴ In March 2013, one additional facility was identified as subject to the risk reduction requirements. It subsequently submitted a risk reduction plan in August 2013 and revised and amended it in November 2013 and January 2014, respectively. In February 2014, the revised and amended risk reduction plan was provisionally and conditionally approved.

APPENDIX A

RECLAIM UNIVERSE OF SOURCES

The RECLAIM universe of active sources as of the end of Compliance Year 2012 is provided below.

| Facility ID | Cycle | Facility Name | Program |
|-------------|-------|--|---------|
| 800088 | 2 | 3M COMPANY | NOx |
| 23752 | 2 | AEROCRAFT HEAT TREATING CO INC | NOx |
| 115394 | 1 | AES ALAMITOS, LLC | NOx |
| 115389 | 2 | AES HUNTINGTON BEACH, LLC | NOx/SOx |
| 42676 | 2 | AES PLACERITA INC | NOx |
| 115536 | 1 | AES REDONDO BEACH, LLC | NOx |
| 148236 | 2 | AIR LIQUIDE LARGE INDUSTRIES U.S., LP | NOx/SOx |
| 3417 | 1 | AIR PROD & CHEM INC | NOx |
| 101656 | 2 | AIR PRODUCTS AND CHEMICALS, INC. | NOx |
| 5998 | 1 | ALL AMERICAN ASPHALT | NOx |
| 114264 | 1 | ALL AMERICAN ASPHALT | NOx |
| 3704 | 2 | ALL AMERICAN ASPHALT, UNIT NO.01 | NOx |
| 800196 | 2 | AMERICAN AIRLINES INC | NOx |
| 145836 | 2 | AMERICAN APPAREL DYEING & FINISHING, INC | NOx |
| 156722 | 1 | AMERICAN APPAREL KNIT AND DYE | NOx |
| 21598 | 2 | ANGELICA TEXTILE SERVICES | NOx |
| 74424 | 2 | ANGELICA TEXTILE SERVICES | NOx |
| 16642 | 1 | ANHEUSER-BUSCH INC., (LA BREWERY) | NOx/SOx |
| 117140 | 2 | AOC, LLC | NOx |
| 167066 | 1 | ARLON GRAPHICS L.L.C. | NOx |
| 12155 | 1 | ARMSTRONG WORLD INDUSTRIES INC | NOx |
| 16737 | 2 | ATKINSON BRICK CO | NOx |
| 10094 | 2 | ATLAS CARPET MILLS INC | NOx |
| 117290 | 2 | B BRAUN MEDICAL, INC | NOx |
| 800016 | 2 | BAKER COMMODITIES INC | NOx |
| 800205 | 2 | BANK OF AMERICA NT & SA, BREA CENTER | NOx |
| 40034 | 1 | BENTLEY PRINCE STREET INC | NOx |
| 119907 | 1 | BERRY PETROLEUM COMPANY | NOx |
| 166073 | 1 | BETA OFF SHORE | NOx |
| 155474 | 2 | BICENT (CALIFORNIA) MALBURG LLC | Nox |

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| Facility ID | Cycle | Facility Name | Program |
|-------------|-------|--|---------|
| 132068 | 1 | BIMBO BAKERIES USA INC | NOx |
| 115241 | 1 | BOEING SATELLITE SYSTEMS INC | NOx |
| 800067 | 1 | BOEING SATELLITE SYSTEMS INC | NOx |
| 174544 | 2 | BREITBURN OPERATION LP | NOx |
| 25638 | 2 | BURBANK CITY, BURBANK WATER & POWER | NOx |
| 128243 | 1 | BURBANK CITY,BURBANK WATER & POWER,SCPPA | NOx |
| 800344 | 1 | CALIFORNIA AIR NATIONAL GUARD, MARCH AFB | NOx |
| 22607 | 2 | CALIFORNIA DAIRIES, INC | NOx |
| 138568 | 1 | CALIFORNIA DROP FORGE, INC | NOx |
| 800181 | 2 | CALIFORNIA PORTLAND CEMENT CO | NOx/SOx |
| 46268 | 1 | CALIFORNIA STEEL INDUSTRIES INC | NOx |
| 107653 | 2 | CALMAT CO | NOx |
| 107654 | 2 | CALMAT CO | NOx |
| 107655 | 2 | CALMAT CO | NOx |
| 107656 | 2 | CALMAT CO | NOx |
| 119104 | 1 | CALMAT CO | NOx/SOx |
| 153992 | 1 | CANYON POWER PLANT | NOx |
| 94930 | 1 | CARGILL INC | NOx |
| 22911 | 2 | CARLTON FORGE WORKS | NOx |
| 118406 | 1 | CARSON COGENERATION COMPANY | NOx |
| 141555 | 2 | CASTAIC CLAY PRODUCTS, LLC | NOx |
| 800373 | 1 | CENCO REFINING COMPANY | NOx/SOx |
| 148925 | 1 | CHERRY AEROSPACE | NOx |
| 800030 | 2 | CHEVRON PRODUCTS CO. | NOx/SOx |
| 56940 | 1 | CITY OF ANAHEIM/COMB TURBINE GEN STATION | NOx |
| 172077 | 1 | CITY OF COLTON | NOx |
| 129810 | 1 | CITY OF RIVERSIDE PUBLIC UTILITIES DEPT | NOx |
| 139796 | 1 | CITY OF RIVERSIDE PUBLIC UTILITIES DEPT | NOx |
| 164204 | 2 | CITY OF RIVERSIDE, PUBLIC UTILITIES DEPT | NOx |
| 16978 | 2 | CLOUGHERTY PACKING LLC/HORMEL FOODS CORP | NOx |
| 800210 | 2 | CONEXANT SYSTEMS INC | NOx |
| 38440 | 2 | COOPER & BRAIN - BREA | NOx |
| 68042 | 2 | CORONA ENERGY PARTNERS, LTD | NOx |
| 152707 | 1 | CPV SENTINEL LLC | NOx |
| 50098 | 1 | D&D DISPOSAL INC,WEST COAST RENDERING CO | NOx |
| 63180 | 1 | DARLING INTERNATIONAL INC | NOx |

ANNUAL RECLAIM AUDIT

| Facility ID | Cycle | Facility Name | Program |
|-------------|-------|--|---------|
| 3721 | 2 | DART CONTAINER CORP OF CALIFORNIA | NOx |
| 7411 | 2 | DAVIS WIRE CORP | NOx |
| 143738 | 2 | DCOR LLC | NOx |
| 143739 | 2 | DCOR LLC | NOx |
| 143740 | 2 | DCOR LLC | NOx |
| 143741 | 1 | DCOR LLC | NOx |
| 132071 | 1 | DEAN FOODS CO. OF CALIFORNIA | NOx |
| 47771 | 1 | DELEO CLAY TILE CO INC | NOx |
| 800037 | 2 | DEMENNO/KERDOON | NOx |
| 125579 | 1 | DIRECTV | NOx |
| 800189 | 1 | DISNEYLAND RESORT | NOx |
| 174371 | 2 | DP3 HANGARS, LLC | NOx |
| 142536 | 2 | DRS SENSORS & TARGETING SYSTEMS, INC | NOx |
| 800264 | 2 | EDGINGTON OIL COMPANY | NOx/SOx |
| 115663 | 1 | EL SEGUNDO POWER, LLC | NOx |
| 800372 | 2 | EQUILON ENTER. LLC, SHELL OIL PROD. US | NOx/SOx |
| 124838 | 1 | EXIDE TECHNOLOGIES | NOx/SOx |
| 17344 | 1 | EXXONMOBIL OIL CORP | NOx |
| 25058 | 2 | EXXONMOBIL OIL CORP | NOx |
| 800089 | 1 | EXXONMOBIL OIL CORPORATION | NOx/SOx |
| 800094 | 1 | EXXONMOBIL OIL CORPORATION | NOx |
| 95212 | 1 | FABRICA | NOx |
| 11716 | 1 | FONTANA PAPER MILLS INC | NOx |
| 346 | 1 | FRITO-LAY, INC. | NOx |
| 2418 | 2 | FRUIT GROWERS SUPPLY CO | NOx |
| 142267 | 2 | FS PRECISION TECH LLC | NOx |
| 5814 | 1 | GAINNEY CERAMICS INC | NOx |
| 115315 | 1 | GEN ON WEST, INC. | NOx |
| 153033 | 2 | GEORGIA-PACIFIC CORRUGATED LLC | NOx |
| 152857 | 2 | GEORGIA-PACIFIC GYPSUM LLC | NOx |
| 124723 | 1 | GREKA OIL & GAS, INC | NOx |
| 137471 | 2 | GRIFOLS BIOLOGICALS INC | NOx |
| 156741 | 2 | HARBOR COGENERATION CO, LLC | NOx |
| 157359 | 1 | HENKEL CORPORATION | NOx |
| 123774 | 1 | HERAEUS METAL PROCESSING, LLC | NOx |
| 113160 | 2 | HILTON COSTA MESA | NOx |

ANNUAL RECLAIM AUDIT

| Facility ID | Cycle | Facility Name | Program |
|-------------|-------|--|---------|
| 160888 | 1 | HINES REIT EL SEGUNDO, LP | NOx |
| 800066 | 1 | HITCO CARBON COMPOSITES INC | NOx |
| 2912 | 2 | HOLLIDAY ROCK CO INC | NOx |
| 800003 | 2 | HONEYWELL INTERNATIONAL INC | NOx |
| 124619 | 1 | IMPRESS USA INC | NOx |
| 124808 | 2 | INEOS POLYPROPYLENE LLC | NOx/SOx |
| 129816 | 2 | INLAND EMPIRE ENERGY CENTER, LLC | NOx |
| 157363 | 2 | INTERNATIONAL PAPER CO | NOx |
| 169678 | 1 | ITT CANNON, LLC | NOx |
| 16338 | 1 | KAISER ALUMINUM FABRICATED PRODUCTS, LLC | NOx |
| 21887 | 2 | KIMBERLY-CLARK WORLDWIDE INC.-FULT. MILL | NOx/SOx |
| 1744 | 2 | KIRKHILL - TA COMPANY | NOx |
| 800335 | 2 | LA CITY, DEPT OF AIRPORTS | NOx |
| 800170 | 1 | LA CITY, DWP HARBOR GENERATING STATION | NOx |
| 800074 | 1 | LA CITY, DWP HAYNES GENERATING STATION | NOx |
| 800075 | 1 | LA CITY, DWP SCATTERGOOD GENERATING STN | NOx |
| 800193 | 2 | LA CITY, DWP VALLEY GENERATING STATION | NOx |
| 61962 | 1 | LA CITY, HARBOR DEPT | NOx |
| 550 | 1 | LA CO., INTERNAL SERVICE DEPT | NOx |
| 173904 | 2 | LAPEYRE INDUSTRIAL SANDS, INC | NOx |
| 141295 | 2 | LEKOS DYE AND FINISHING, INC | NOx |
| 144455 | 2 | LIFOAM INDUSTRIES, LLC | NOx |
| 83102 | 2 | LIGHT METALS INC | NOx |
| 151394 | 2 | LINN WESTERN OPERATING INC | NOx |
| 151532 | 2 | LINN WESTERN OPERATING INC | NOx |
| 152054 | 1 | LINN WESTERN OPERATING INC | NOx |
| 151415 | 2 | LINN WESTERN OPERATING, INC | NOx |
| 115314 | 2 | LONG BEACH PEAKERS LLC | NOx |
| 17623 | 2 | LOS ANGELES ATHLETIC CLUB | NOx |
| 58622 | 2 | LOS ANGELES COLD STORAGE CO | NOx |
| 125015 | 2 | LOS ANGELES TIMES COMMUNICATIONS LLC | NOx |
| 800080 | 2 | LUNDAY-THAGARD COMPANY | NOx/SOx |
| 38872 | 1 | MARS PETCARE U.S., INC. | NOx |
| 14049 | 2 | MARUCHAN INC | NOx |
| 3029 | 2 | MATCHMASTER DYEING & FINISHING INC | NOx |
| 2825 | 1 | MCP FOODS INC | NOx |

ANNUAL RECLAIM AUDIT

| Facility ID | Cycle | Facility Name | Program |
|-------------|-------|--|---------|
| 173290 | 1 | MEDICLEAN | NOx |
| 115563 | 1 | METAL COATERS OF CALIFORNIA | NOx |
| 94872 | 2 | METAL CONTAINER CORP | NOx |
| 155877 | 1 | MILLERCOORS, LLC | NOx |
| 12372 | 1 | MISSION CLAY PRODUCTS | NOx |
| 11887 | 2 | NASA JET PROPULSION LAB | NOx |
| 40483 | 2 | NELCO PROD. INC | NOx |
| 172005 | 2 | NEW-INDY ONTARIO, LLC | NOx |
| 12428 | 2 | NEW NGC, INC. | NOx |
| 131732 | 2 | NEWPORT FAB, LLC | NOx |
| 18294 | 1 | NORTHROP GRUMMAN CORP, AIRCRAFT DIV | NOx |
| 800408 | 1 | NORTHROP GRUMMAN SYSTEMS | NOx |
| 800409 | 2 | NORTHROP GRUMMAN SYSTEMS CORPORATION | NOx |
| 112853 | 2 | NP COGEN INC | NOx |
| 89248 | 2 | OLD COUNTRY MILLWORK INC | NOx |
| 47781 | 1 | OLS ENERGY-CHINO | NOx |
| 35302 | 2 | OWENS CORNING ROOFING AND ASPHALT, LLC | NOx/SOx |
| 7427 | 1 | OWENS-BROCKWAY GLASS CONTAINER INC | NOx/SOx |
| 169754 | 1 | OXY USA INC | NOx |
| 151594 | 1 | OXY USA, INC | NOx |
| 151601 | 1 | OXY USA, INC. | NOx |
| 45746 | 2 | PABCO BLDG PRODUCTS LLC,PABCO PAPER, DBA | NOx/SOx |
| 17953 | 1 | PACIFIC CLAY PRODUCTS INC | NOx |
| 59618 | 1 | PACIFIC CONTINENTAL TEXTILES, INC. | NOx |
| 2946 | 1 | PACIFIC FORGE INC | NOx |
| 130211 | 2 | PAPER-PAK INDUSTRIES | NOx |
| 800183 | 1 | PARAMOUNT PETR CORP | NOx/SOx |
| 800168 | 1 | PASADENA CITY, DWP | NOx |
| 168088 | 1 | PCCR USA | NOx |
| 171107 | 2 | PHILLIPS 66 CO/LA REFINERY WILMINGTON PL | NOx/SOx |
| 171109 | 1 | PHILLIPS 66 CO/LOS ANGELESREFINERY | NOx/SOx |
| 133987 | 1 | PLAINS EXPLORATION & PRODUCTION CO, LP | NOx |
| 133996 | 2 | PLAINS EXPLORATION & PRODUCTION COMPANY | NOx |
| 137520 | 1 | PLAINS WEST COAST TERMINALS LLC | NOx |
| 800416 | 1 | PLAINS WEST COAST TERMINALS LLC | NOx |
| 800417 | 2 | PLAINS WEST COAST TERMINALS LLC | NOx |

ANNUAL RECLAIM AUDIT

| Facility ID | Cycle | Facility Name | Program |
|-------------|-------|--|---------|
| 800419 | 2 | PLAINS WEST COAST TERMINALS LLC | NOx |
| 800420 | 2 | PLAINS WEST COAST TERMINALS LLC | NOx |
| 800431 | 1 | PRATT & WHITNEY ROCKETDYNE, INC. | NOx |
| 7416 | 1 | PRAXAIR INC | NOx |
| 42630 | 1 | PRAXAIR INC | NOx |
| 152501 | 1 | PRECISION SPECIALTY METALS, INC. | NOx |
| 136 | 2 | PRESS FORGE CO | NOx |
| 105903 | 1 | PRIME WHEEL | NOx |
| 132191 | 1 | PUREENERGY OPERATING SERVICES, LLC | NOx |
| 132192 | 1 | PUREENERGY OPERATING SERVICES, LLC | NOx |
| 173392 | 1 | QUAD/GRAPHICS MARKETING, LLC | NOx |
| 8547 | 1 | QUEMETCO INC | NOx/SOx |
| 19167 | 2 | R J NOBLE COMPANY | NOx |
| 3585 | 2 | R. R. DONNELLEY & SONS CO, LA MFG DIV | NOx |
| 20604 | 2 | RALPHS GROCERY CO | NOx |
| 115041 | 1 | RAYTHEON COMPANY | NOx |
| 114997 | 1 | RAYTHEON COMPANY | NOx |
| 115172 | 2 | RAYTHEON COMPANY | NOx |
| 800371 | 2 | RAYTHEON SYSTEMS COMPANY - FULLERTON OPS | NOx |
| 15544 | 2 | REICHHOLD INC | NOx |
| 52517 | 1 | REXAM BEVERAGE CAN COMPANY | NOx |
| 114801 | 1 | RHODIA INC. | NOx/SOx |
| 61722 | 2 | RICOH ELECTRONICS INC | NOx |
| 139010 | 2 | RIPON COGENERATION LLC | NOx |
| 800182 | 1 | RIVERSIDE CEMENT CO | NOx/SOx |
| 800113 | 2 | ROHR, INC. | NOx |
| 18455 | 2 | ROYALTY CARPET MILLS INC | NOx |
| 4242 | 2 | SAN DIEGO GAS & ELECTRIC | NOx |
| 161300 | 2 | SAPA EXTRUDER, INC | NOx |
| 155221 | 2 | SAVE THE QUEEN LLC (DBA QUEEN MARY) | NOx |
| 15504 | 2 | SCHLOSSER FORGE COMPANY | NOx |
| 20203 | 2 | SCOPE PRODUCTS INC, DEXT CO | NOx |
| 14926 | 1 | SEMPRA ENERGY (THE GAS CO) | NOx |
| 37603 | 1 | SGL TECHNIC INC, POLYCARBON DIVISION | NOx |
| 131850 | 2 | SHAW DIVERSIFIED SERVICES INC | NOx |
| 117227 | 2 | SHCI SM BCH HOTEL LLC, LOEWS SM BCH HOTE | NOx |

ANNUAL RECLAIM AUDIT

| Facility ID | Cycle | Facility Name | Program |
|-------------|-------|--|---------|
| 16639 | 1 | SHULTZ STEEL CO | NOx |
| 54402 | 2 | SIERRA ALUMINUM COMPANY | NOx |
| 85943 | 2 | SIERRA ALUMINUM COMPANY | NOx |
| 101977 | 1 | SIGNAL HILL PETROLEUM INC | NOx |
| 119596 | 2 | SNAK KING CORPORATION | NOx |
| 43201 | 2 | SNOW SUMMIT INC | NOx |
| 4477 | 1 | SO CAL EDISON CO | NOx |
| 5973 | 1 | SO CAL GAS CO | NOx |
| 800127 | 1 | SO CAL GAS CO | NOx |
| 800128 | 1 | SO CAL GAS CO | NOx |
| 8582 | 1 | SO CAL GAS CO/PLAYA DEL REY STORAGE FACI | NOx |
| 14871 | 2 | SONOCO PRODUCTS CO | NOx |
| 160437 | 1 | SOUTHERN CALIFORNIA EDISON | NOx |
| 800338 | 2 | SPECIALTY PAPER MILLS INC | NOx |
| 126498 | 2 | STEELSCAPE, INC | NOx |
| 105277 | 2 | SULLY MILLER CONTRACTING CO | NOx |
| 19390 | 1 | SULLY-MILLER CONTRACTING CO. | NOx |
| 2083 | 1 | SUPERIOR INDUSTRIES INTERNATIONAL INC | NOx |
| 3968 | 1 | TABC, INC | NOx |
| 18931 | 2 | TAMCO | NOx |
| 14944 | 1 | TECHALLOY CO., INC. | NOx/SOx |
| 174591 | 1 | TESORO REFINING & MARKETING CO LLC, CAL | NOX/SOx |
| 174655 | 2 | TESORO REFINING & MARKETING CO LLC | NOX/SOx |
| 151798 | 1 | TESORO REFINING AND MARKETING CO | NOx/SOx |
| 800436 | 1 | TESORO REFINING AND MARKETING CO | NOx/SOx |
| 96587 | 1 | TEXOLLINI INC | NOx |
| 148340 | 2 | THE BOEING CO. COMMERCIAL AVIATION SRVCS | NOx |
| 14736 | 2 | THE BOEING COMPANY | NOx |
| 16660 | 2 | THE BOEING COMPANY | NOx |
| 800038 | 2 | THE BOEING COMPANY - C17 PROGRAM | NOx |
| 11119 | 1 | THE GAS CO./ SEMPRA ENERGY | NOx |
| 153199 | 1 | THE KROGER CO/RALPHS GROCERY CO | NOx |
| 11435 | 2 | THE PQ CORP | NOx/SOx |
| 97081 | 1 | THE TERMO COMPANY | NOx |
| 800330 | 1 | THUMS LONG BEACH | NOx |
| 129497 | 1 | THUMS LONG BEACH CO | NOx |

ANNUAL RECLAIM AUDIT

| Facility ID | Cycle | Facility Name | Program |
|-------------|-------|--|---------|
| 800325 | 2 | TIDELANDS OIL PRODUCTION CO | NOx |
| 68118 | 2 | TIDELANDS OIL PRODUCTION COMPANY ETAL | NOx |
| 171960 | 2 | TIN, INC. DBA INTERNATIONAL PAPER | NOx |
| 137508 | 2 | TONOGA INC, TACONIC DBA | NOx |
| 53729 | 1 | TREND OFFSET PRINTING SERVICES, INC | NOx |
| 9053 | 1 | TRIGEN- LA ENERGY CORP | NOx |
| 11034 | 2 | TRIGEN-LA ENERGY CORP | NOx |
| 165192 | 2 | TRIUMPH AEROSTRUCTURES, LLC | NOx |
| 43436 | 1 | TST, INC. | NOx |
| 800026 | 1 | ULTRAMAR INC | NOx/SOx |
| 9755 | 2 | UNITED AIRLINES INC | NOx |
| 73022 | 2 | US AIRWAYS INC | NOx |
| 800149 | 2 | US BORAX INC | NOx |
| 800150 | 1 | US GOVT, AF DEPT, MARCH AIR RESERVE BASE | NOx |
| 1073 | 1 | US TILE CO | NOx |
| 800393 | 1 | VALERO WILMINGTON ASPHALT PLANT | NOx |
| 14502 | 2 | VERNON CITY, LIGHT & POWER DEPT | NOx |
| 148896 | 2 | VINTAGE PRODUCTION CALIFORNIA LLC | NOx |
| 148897 | 2 | VINTAGE PRODUCTION CALIFORNIA LLC | NOx |
| 151899 | 2 | VINTAGE PRODUCTION CALIFORNIA LLC | NOx |
| 14495 | 2 | VISTA METALS CORPORATION | NOx |
| 146536 | 1 | WALNUT CREEK ENERGY PARK | NOx/SOx |
| 42775 | 1 | WEST NEWPORT OIL CO | NOx/SOx |
| 17956 | 1 | WESTERN METAL DECORATING CO | NOx |
| 51620 | 1 | WHEELABRATOR NORWALK ENERGY CO INC | NOx |
| 127299 | 2 | WILDFLOWER ENERGY LP/INDIGO GEN., LLC | NOx |
| 158950 | 1 | WINDSOR QUALITY FOOD CO. LTD. | NOx |

APPENDIX B FACILITY INCLUSIONS

As discussed in Chapter 1, two facilities were added to the RECLAIM universe between July 1, 2012 and the end of Compliance Year 2012. The included facilities are identified, and the reasons for inclusion are also provided.

| Facility ID | Cycle | Facility Name | Market | Date | Reason |
|-------------|-------|------------------------|--------|-----------|---|
| 119596 | 2 | SNAK KING CORPORATION | NOx | 8/23/2012 | Opt-in at facility request. |
| 172005 | 2 | NEW- INDY ONTARIO, LLC | NOx | 7/3/2012 | Partial change of operator from an existing facility. |

APPENDIX C
RECLAIM FACILITIES CEASING OPERATION OR EXCLUDED

SCAQMD staff is aware of the following RECLAIM facilities that permanently shut down all operations, inactivated their RECLAIM permits, or were excluded from the RECLAIM universe during Compliance Year 2012. The reasons for shutdowns and exclusions cited below are based on the information provided by the facilities and other information available to SCAQMD staff.

| | |
|---------------------|---|
| Facility ID | 9217 |
| Facility Name | VEOLIA ENERGY LOS ANGELES, INC |
| City and County | Fullerton, Orange County |
| SIC | 4961 |
| Pollutants | NOx |
| 1994 Allocation | 26,274 |
| Reason for Shutdown | The facility shut down all its operations, the only piece of process equipment was rendered inoperable, and the property was sold to Hope University which is exempt from RECLAIM per Rule 2001(i)(2)(H). |

| | |
|---------------------|---|
| Facility ID | 111415 |
| Facility Name | VAN CAN COMPANY |
| City and County | Fontana, San Bernardino County |
| SIC | 3411 |
| Pollutants | NOx |
| 1994 Allocation | 8,310 |
| Reason for Shutdown | Operations moved to new plant in Tennessee. |

| | |
|---------------------|--|
| Facility ID | 167432 |
| Facility Name | EDISON MISSION HUNTINGTON BEACH, LLC |
| City and County | Huntington Beach, Orange County |
| SIC | 4911 |
| Pollutants | NOx/SOx |
| 1994 Allocation | 1,024,673 |
| Reason for Shutdown | Air quality mitigation for a new power plant (Walnut Creek Energy LLC, ID: 146536) also located in the SCAQMD. |

| | |
|---------------------|--|
| Facility ID | 800110 |
| Facility Name | THE BOEING COMPANY |
| City and County | Anaheim, Orange County |
| SIC | 3812 |
| Pollutants | NOx |
| 1994 Allocation | 17,846 |
| Reason for Shutdown | Facility consolidated operations at another Boeing facility in Huntington Beach (ID: 16660). |

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| | |
|---------------------|---|
| Facility ID | 800343 |
| Facility Name | BOEING SATELLITE SYSTEMS, INC |
| City and County | El Segundo, Los Angeles County |
| SIC | 3669 |
| Pollutants | NOx |
| 1994 Allocation | 6,620 |
| Reason for Shutdown | Facility consolidated operations at another Boeing facility in El Segundo (ID: 800067). |

APPENDIX D
FACILITIES THAT EXCEEDED THEIR ANNUAL ALLOCATION
FOR COMPLIANCE YEAR 2012

The following is a list of facilities that did not have enough RTCs to cover their NOx and/or SOx emissions in Compliance Year 2012 based on the results of audits conducted by SCAQMD staff.

| Facility ID | Facility Name | Compliance Year | Emittant |
|-------------|---|-----------------|----------|
| 3704 | ALL AMERICAN ASPHALT CORONA | 2012 | NOx |
| 5998 | ALL AMERICAN ASPHALT WESTMINSTER | 2012 | NOx |
| 17956 | WESTERN METAL DECORATING CO | 2012 | NOx |
| 59618 | PACIFIC CONTINENTAL TEXTILES, INC | 2012 | NOx |
| 73022 | US AIRWAYS INC | 2012 | NOx |
| 101656 | AIR PRODUCTS AND CHEMICALS, INC | 2012 | NOx |
| 118406 | CARSON COGENERATION COMPANY | 2012 | NOx |
| 129816 | INLAND EMPIRE ENERGY CENTER, LLC | 2012 | NOx |
| 133996 | PLAINS EXPLORATION AND PRODUCTION COMPANY | 2012 | NOx |
| 145836 | AMERICAN APPAREL DYEING & FINISHING, INC | 2012 | NOx |
| 153199 | THE KROGER CO/RALPHS GROCERY CO | 2012 | NOx |
| 171107 | PHILLIPS 66 CO/LA REFINERY WILMINGTON PL | 2012 | NOx |
| 800182 | RIVERSIDE CEMENT CO | 2012 | NOx/SOx |

APPENDIX E

REPORTED JOB IMPACTS ATTRIBUTED TO RECLAIM

Each year, RECLAIM facility operators are asked to provide employment data in their APEP reports. The report asks company representatives to quantify job increases and/or decreases, and to report the positive and/or negative impacts of the RECLAIM program on employment at their facilities.

This appendix is included in each Annual RECLAIM Audit Report to provide detailed information for facilities reporting that RECLAIM contributed to job gains or losses. During Compliance Year 2012, no facility reported actual job gains or losses attributable to RECLAIM.