



# South Coast Air Quality Management District

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

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## A G E N D A

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**MEETING, MARCH 6, 2015**

### *SCAQMD SPECIAL MEETING IN LONG BEACH*

A meeting of the South Coast Air Quality Management District Board will be held at 9:00 a.m., in the Council Chambers at Long Beach City Hall, [333 West Ocean Blvd](#), Long Beach, California.

#### **Questions About an Agenda Item**

- The name and telephone number of the appropriate staff person to call for additional information or to resolve concerns is listed for each agenda item.
- In preparation for the meeting, you are encouraged to obtain whatever clarifying information may be needed to allow the Board to move expeditiously in its deliberations.

#### **Meeting Procedures**

- The public meeting of the AQMD Governing Board begins at 9:00 a.m. The Governing Board generally will consider items in the order listed on the agenda. However, any item may be considered in any order.
- After taking action on any agenda item not requiring a public hearing, the Board may reconsider or amend the item at any time during the meeting.

#### **Questions About Progress of the Meeting**

- During the meeting, the public may call the Clerk of the Board's Office at (909) 396-2500 for the number of the agenda item the Board is currently discussing.

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The agenda and documents in the agenda packet will be made available upon request in appropriate alternative formats to assist persons with a disability. Disability-related accommodations will also be made available to allow participation in the Board meeting. Any accommodations must be requested as soon as practicable. Requests will be accommodated to the extent feasible. Please telephone the Clerk of the Boards Office at (909) 396-2500 from 7:00 a.m. to 5:30 p.m. Tuesday through Friday.

All documents (i) constituting non-exempt public records, (ii) relating to an item on the agenda, and (iii) having been distributed to at least a majority of the Governing Board after the agenda is posted, are available prior to the meeting for public review at the South Coast Air Quality Management District Clerk of the Board's Office, 21865 Copley Drive, Diamond Bar, CA 91765.

The Agenda is subject to revisions. For the latest version of agenda items herein or missing agenda items, check the District's web page ([www.aqmd.gov](http://www.aqmd.gov)) or contact the Clerk of the Board, (909) 396-2500. Copies of revised agendas will also be available at the Board meeting.

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*Cleaning the air that we breathe...™*

## **CALL TO ORDER**

- Pledge of Allegiance
- Opening Comments: William A. Burke, Ed.D., Chair  
Other Board Members  
Barry R. Wallerstein, D. Env., Executive Officer
- Overview of Efforts by Port of Long Beach to Develop an Enhanced Energy Sustainability Program with Associated Air Quality Benefits – *(No Written Material)* **Burke**

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Staff/Phone (909) 396-

## **CONSENT CALENDAR (Items 1 through 17)**

Note: Consent Calendar items held for discussion will be moved to Item No. 18

1. Approve Minutes of February 6, 2015 Board Meeting **McDaniel/2500**
2. Set Public Hearings April 3, 2015 to Consider Amendments and/or Adoption to SCAQMD Rules and Regulations **Wallerstein/3131**
  - A. Amend Regulation IX - Standards of Performance for New Stationary Sources, and Regulation X - National Emission Standards for Hazardous Air Pollutants **Fine/2239**

Amendments to Regulations IX and X are periodically made to incorporate new or amended federal performance standards that have been enacted by U.S. EPA for stationary sources. These standards are currently in effect and enforceable by SCAQMD pursuant to the federal Clean Air Act, regardless of whether SCAQMD incorporates them into Regulations IX and X. The Board has historically adopted NSPS (40 CFR 60) and NESHAPS (40 CFR 61) into Regulations IX and X, by reference, thus providing stationary sources with a single source of information for determining which federal and local requirements apply to their specific operations. The NSPS and NESHAPS actions by U.S. EPA, primarily from July 1, 2011 to December 31, 2014, are proposed for incorporation into Regulations IX and X, respectively, including new performance standards for certain oil and gas operations not covered by previous EPA regulation. The actions also include amendments to previous provisions of twelve NSPS standards and two NESHAPS standards. (Reviewed: Stationary Source Committee, February 20, 2015)


**B. Receive Public Input on Executive Officer's Draft Goals and Priority Objectives for FY 2015-16** **Wallerstein/3131**

A set of draft goals for the FY 2015-16 Budget has been developed. The Executive Officer wishes to receive public and Board Member input on these goals and priority objectives as they serve as the foundation of SCAQMD's Work Program. (Reviewed: Administrative Committee, February 13, 2015)


**Budget/Fiscal Impact**

**3. Adopt Resolution Recognizing Funds and Accepting Terms and Conditions for FY 2014-15 Carl Moyer Program Award, Issue Program Announcements for Carl Moyer Program and SOON Provision, and Execute and Amend Contracts** **Miyasato/3249**

These actions are to adopt a resolution recognizing \$25,523,118 in Carl Moyer Program grant awards from CARB under SB 1107 with its terms and conditions for FY 2014-15 and to approve the release of Program Announcements for the FY 2014-15 "Year 17" Carl Moyer Program and SOON Provision to provide incentive funding for low-emitting on- and off-road vehicles and equipment. Additionally, these actions are to execute contracts in the amount of \$2,533,900 from the Carl Moyer Program SB 1107 Fund (32) and amend contracts in the amount of \$199,659 from the Carl Moyer and Proposition 1B Programs. (Reviewed: Technology Committee, February 20, 2015; Recommended for Approval)

**4. Execute and Modify Contracts for Hydrogen Station Upgrades and Related Work ** **Miyasato/3249**

Last year, the Board approved contracts for hydrogen station upgrades in the South Coast Air Basin. While these stations are being upgraded, equipment must be taken out of service. To continue to provide hydrogen fuel to customers at stations being upgraded, CEC through PON 13-607 provided \$999,677 to develop and deploy a commercial mobile hydrogen fueler at stations going offline for the equipment upgrade transition. This action is to cofund development and demonstration of the commercial mobile hydrogen fueler up to \$200,000 from the Clean Fuels Fund (31). These actions are to also modify a previous award for Mebtahi's hydrogen station upgrade adding \$400,000 and to amend a technical assistance contract adding \$50,000 to evaluate upgraded hydrogen equipment from the Hydrogen Fueling Infrastructure Network Fund (63). Finally, temporary loans of \$201,461 and \$297,460 from the Clean Fuels Fund (31) to the Hydrogen Fueling Infrastructure Fund (63) and Hydrogen Fueling Station Special Revenue Fund (55), respectively, are required until CEC revenue is received to implement hydrogen station upgrades and readiness efforts. (Reviewed: Technology Committee, February 20, 2015; Recommended for Approval)

5. Issue Program Announcement for School Bus Replacements and Retrofits  **Miyasato/3249**

Since 2001, the SCAQMD has replaced over 1,400 pre-1994 school buses and retrofitted nearly 3,400 school buses. The Carl Moyer AB 923 funds can be utilized for replacement and retrofit of school buses. This action is to approve the issuance of a Program Announcement to replace pre-1994 school buses with new alternative fuel buses and to retrofit 1994 to 2006 model year school buses with particulate traps. (Reviewed: Technology Committee, February 20, 2015; Recommended for Approval)

6. Support Utility Electric Vehicle Charging Program **Miyasato/3249**

Southern California Edison (SCE) has applied to the California Public Utilities Commission (CPUC) to conduct a two-phase electric vehicle charging implementation and market education program "Charge Ready." The first phase is a pilot program, which is limited in scope with the total cost to be recovered from the ratepayer and intended to provide valuable information related to further deployment of infrastructure and ratepayer benefits. The second phase would implement a much larger number of charging stations over four years based on the results from the Phase 1 Pilot Program. This action is to convey to the CPUC the SCAQMD's support of SCE's "Charge Ready" Phase 1 Pilot Program. (Reviewed: Technology Committee, February 20, 2015; Recommended for Approval)

7. Approve SCAQMD Annual Investment Policy, Delegation of Authority to Appointed Treasurer to Invest SCAQMD Funds, Delegation of Authority to Appoint Acting Treasurer and Revised Treasury Operations Contingency Plan and Procedures **O'Kelly/2828**

State law requires a local government entity annually to provide a statement of investment policy for consideration at a public meeting and to renew its delegation of authority to its treasurer to invest or reinvest funds of the local agency. In addition, the existing delegation of authority to appoint an acting Treasurer and Treasury Operations Contingency Plan and Procedures are being renewed and revised. (Reviewed: Investment Oversight Committee, February 20, 2015; Recommended for Approval)

8. Appropriate Funds from Designation for Litigation and Enforcement and Authorize Amending/Initiating Contracts with Outside Counsel and Specialized Legal Services **Wiese/3460**

Legal is currently being assisted in environmental lawsuits by outside law firms and in other matters requiring specialized legal counsel and services. This action is to appropriate \$500,000 from the Designation for Litigation and Enforcement, to FY 2014-15 Legal Budget and amend or initiate contracts to expend these funds with prequalified counsel approved by the Board as well as specialized legal counsel and services. (Reviewed: Administrative Committee, February 13, 2015; Recommended for Approval)



9. Approve Salary Adjustments for Executive Officer and General Counsel and Revisions to Employment Contracts **Burke**

The Personnel Committee recommends the Executive Officer and General Counsel receive the same salary adjustments to those provided to employees in the Technical/Enforcement & Office Clerical and Maintenance bargaining units, effective with the first pay period encompassing January 1, 2015. Funding for these increases is available in the FY 2014-15 Budget. This action is to present the Committee's recommendation to the Board for consideration and approval. (Reviewed: Personnel Committee, February 13, 2015)

**Items 10 through 17 - Information Only/Receive and File**

10. Legislative and Public Affairs Report **Smith/3242**

This report highlights the January 2015 outreach activities of Legislative and Public Affairs, which include: Environmental Justice Update, Community Events/Public Meetings, Business Assistance, and Outreach to Business and Federal, State, and Local Government. (No Committee Review)

11. Hearing Board Report **Camarena/2500**

This reports the actions taken by the Hearing Board during the period of January 1 through January 31, 2015. (No Committee Review)

12. Civil Filings and Civil Penalties Report **Wiese/3460**

This reports the monthly penalties from January 1 through January 31, 2015, and legal actions filed by the General Counsel's Office from January 1 through January 31, 2015. An Index of District Rules is attached with the penalty report. (Reviewed: Stationary Source Committee, February 20, 2015)

13. Lead Agency Projects and Environmental Documents Received by SCAQMD **Chang/3186**

This report provides, for the Board's consideration, a listing of CEQA documents received by the SCAQMD between January 1, 2015 and January 31, 2015, and those projects for which the SCAQMD is acting as lead agency pursuant to CEQA. (Reviewed: Mobile Source Committee, February 20, 2015)

14. Rule and Control Measure Forecast **Chang/3186**

This report highlights SCAQMD rulemaking activities and public workshops potentially scheduled for the year 2015. (No Committee Review)

15. Report of RFQs Scheduled for Release in March **O'Kelly/2828**

This report summarizes the RFQs for budgeted services over \$75,000 scheduled to be released for advertisement for the month of March. (Reviewed: Administrative Committee, February 13, 2015; Recommended for Approval)

16. FY 2014-15 Contract Activity **O'Kelly/2828**

This report lists the number of contracts let during the first six months of FY 2014-15, the respective dollar amounts, award type, and the authorized contract signatory for SCAQMD. (No Committee Review)

17. Status Report on Major Projects for Information Management Scheduled to Start During Last Six Months of FY 2014-15 **Marlia/3148**

Information Management is responsible for data systems management services in support of all SCAQMD operations. This action is to provide the monthly status report on major automation contracts and projects to be initiated by Information Management during the last six months of FY 2014-15. (No Committee Review)

18. Items Deferred from Consent Calendar

**BOARD CALENDAR**

- |     |   |                          |                         |
|-----|---|--------------------------|-------------------------|
| 19. | Administrative Committee (Receive & File)       | <b>Chair: Burke</b>      | <b>Wallerstein/3131</b> |
| 20. | Investment Oversight Committee (Receive & File) | <b>Chair: Antonovich</b> | <b>O'Kelly/2828</b>     |
| 21. | Legislative Committee (Receive & File)          | <b>Chair: Mitchell</b>   | <b>Smith/3242</b>       |

Receive and file; and take the following actions as recommended:

<b>Agenda Item</b>	<b>Recommendation</b>
2015 Legislative Goals and Objectives	Approve
SB 32 (Pavley) California Global Warming Solutions Act of 2006: Emissions Limit	Support with Amendments
AB 156 (Perea) California Global Warming Solutions Act of 2006: Investment Plan	Support

- |     |  |                            |                      |
|-----|--|----------------------------|----------------------|
| 22. | Mobile Source Committee (Receive & File)                       | <b>Chair: Parker</b>       | <b>Chang/3186</b>    |
| 23. | Stationary Source Committee (Receive & File)                   | <b>Chair: Yates</b>        | <b>Nazemi/2662</b>   |
| 24. | Technology Committee (Receive & File)                          | <b>Chair: J. Benoit</b>    | <b>Miyasato/3249</b> |
| 25. | California Air Resources Board Monthly Report (Receive & File) | <b>Board Rep: Mitchell</b> | <b>McDaniel/2500</b> |

**Staff Presentation/Board Discussion**

- |     |  |                   |
|-----|--|-------------------|
| 26. | Proposed Work Plan for Implementing Office of Environmental Health Hazard Assessment's Revised Air Toxics Hot Spots Program Risk Assessment Guidelines | <b>Chang/3186</b> |
|-----|--|-------------------|

The Office of Environmental Health Hazard Assessment (OEHHA) has revised the Air Toxics Hot Spots Program Risk Assessment Guidelines. The guidelines are designed to improve the way the state estimates potential lifetime health risk from air toxics and makes adjustments based on new science about both increased childhood exposure to and sensitivity to air toxics. The SCAQMD's permitting program, AB2588 Hot Spots program, existing regulatory program, and CEQA guidelines rely on OEHHA's guidelines for assessing health risks. As such, implementing the Revised Guidelines will have a variety of implications for SCAQMD's air toxics program. Staff will present to the Board a Work Plan to implement the revised OEHHA guidelines. (No committee review).

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|-----|---|------------------|
| 27. | Proposed Comments on U.S. EPA's Proposed Ozone Standard | <b>Fine/2239</b> |
|-----|---|------------------|

In November of 2014, U.S. EPA proposed to tighten the National Ambient Air Quality Standard (NAAQS) for 8-hour ozone from the current 75 ppb to a range of 65-70 ppb. The proposal also includes potential changes to the monitoring requirements for ozone and its precursors. Staff is recommending submitting comments to U.S. EPA similar to Board-approved comments submitted in 2010 when U.S. EPA proposed a similar standard that was never finalized. Additional comments are also recommended. This action is to seek Board approval to resubmit the original Board-approved comments, as well as the new supplemental comments, to U.S. EPA regarding their proposed revision to the NAAQS for ozone. (Reviewed: Mobile Source Committee, February 20, 2015; Recommended for Approval, with suggested changes)

## **PUBLIC HEARINGS**

28. Amend Rule 1420.1 – Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities **Chang/3186**

At the January 2014 Board meeting, staff reported on two studies to address the technical, economic, and physical feasibility of achieving a total facility mass lead emission rate of 0.003 lb/hour from all lead point sources (stack emissions) at large lead acid battery recycling facilities. Based on elevated levels of lead found in surface dust and soil samples collected and analyzed by the Department of Toxic Substances Control, the Board directed staff to amend Rule 1420.1 – Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities to lower the lead point source emission rate and other possible revisions to reduce lead exposure to the surrounding communities. SCAQMD staff is proposing to lower the point source emission rate limit, lower ambient lead concentration limits, increase the frequency of lead and arsenic monitoring to daily, and other provisions that will further reduce lead exposure and the accumulation of lead in the soil and surface dust. This action is to adopt the resolution: 1) Certifying the Final Subsequent Environmental Assessment for Proposed Amended Rule 1420.1 – Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-acid Battery Recycling Facilities; and 2) Amending Rule 1420.1 – Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities. (Reviewed: Stationary Source Committee, November 21, 2014)

29. Annual RECLAIM Audit Report for 2013 Compliance Year **Nazemi/2662**

The annual report on the NO<sub>x</sub> and SO<sub>x</sub> RECLAIM program is prepared in accordance with Rule 2015 - Backstop Provisions. The report assesses emission reductions, availability of RECLAIM Trading Credits (RTCs) and their average annual prices, job impacts, compliance issues, and other measures of performance for the twentieth year of this program. In addition, recent trends in trading future year RTCs are analyzed and presented in this report. Further, a list of facilities that did not reconcile their emissions for the 2013 Compliance Year is included with the report. (Reviewed: Stationary Source Committee, February 20, 2015)

30. Approve and Adopt Technology Advancement Office Clean Fuels Program Annual Report and Plan Update and Resolution and Receive and File Revised Membership of Technology Advancement Advisory Group **E** **Miyasato/3249**

Each year by March 31, the Technology Advancement Office must submit to the California Legislative Analyst an approved Annual Report for the past year and a Plan Update for the current calendar year. Staff has reviewed the Clean Fuels Program with the Clean Fuels Advisory Group, the Technology Advancement Advisory Group and other technical experts. Additionally, the 2015 Clean Fuels Program Draft Plan Update was presented to the Board for review and comment at its December 5, 2014 meeting. This action is to approve and adopt the final Technology Advancement Clean Fuels Program Annual Report for 2014 and 2015 Plan Update as well as the resolution finding that proposed projects do not duplicate any past or present programs and to receive and file the revised membership of the Technology Advancement Advisory Group. (Reviewed: Technology Committee, February 20, 2015; Recommended for Approval)

**PUBLIC COMMENT PERIOD** – (Public Comment on Non-Agenda Items, Pursuant to Government Code Section 54954.3)

**BOARD MEMBER TRAVEL – (No Written Material)**

Board member travel reports have been filed with the Clerk of the Boards, and copies are available upon request.

**CLOSED SESSION - (No Written Material)**

**Wiese/3460**

It is necessary for the Board to recess to closed session pursuant to Government Code section 54956.9(a) and 54956.9(d)(1) to confer with its counsel regarding pending litigation which has been initiated formally and to which the SCAQMD is a party. The actions are:

- California Nozzle Specialists, Inc. v. SCAQMD, Los Angeles County Superior Court Case No. BS152037 (Public Records Act);
- CBE, CCAT v. EPA, U.S. Court of Appeals, Ninth Circuit, Case No. 12-72358 (1315);
- Communities for a Better Environment, et al. v. U.S. EPA, et al., U.S. Court of Appeals, Ninth Circuit, Case No. 13-70167 (Sentinel);
- People of the State of California, ex rel SCAQMD v. Exide Technologies, Inc., Los Angeles Superior Court Case No. BC533528;
- In the Matter of SCAQMD v. Exide Technologies, Inc., SCAQMD Hearing Board Case No. 3151-29 (Order for Abatement);

- Exide Technologies, Inc., Petition for Variance, SCAQMD Hearing Board Case No. 3151-31;
- In re: Exide Technologies, Inc., U.S. Bankruptcy Court for the District of Delaware Case No. 13-11482 (KJC) (Bankruptcy case);
- Fast Lane Transportation, Inc. et al. v. City of Los Angeles, et al., Contra Costa County Superior Court Case No. MSN14-0300 (formerly South Coast Air Quality Management District v. City of Los Angeles, et al., Los Angeles Superior Court Case No. BS 143381) (SCIG);
- Friedman Marketing v. SCAQMD, California Court of Appeal, Second Appellate District, Case No. B249836 (Rule 461);
- Friends of the Eel River v. North Coast Railway Authority, California Supreme Court Case No. S222472 (amicus brief);
- Friends of the Fire Rings v. SCAQMD, San Diego Superior Court, North County, Case No. 37-2014-00008860-CU-WM-NC (Nov. 26, 2013; transferred March 20, 2014);
- NRDC v. U.S. EPA, U.S. Court of Appeals, Ninth Circuit, Case No. 13-70544 (Rule 317);
- Petition for Declaratory Order by U.S. Environmental Protection Agency, Surface Transportation Board Docket No. FD 35803 (Railroad Rules);
- Physicians for Social Responsibility, et al. v. U.S. EPA, U.S. Court of Appeals, Ninth Circuit, Case No. 12-70079 (PM2.5);
- Physicians for Social Responsibility, et al. v. U.S. EPA, U.S. Court of Appeals, Ninth Circuit, Case No. 14-73362 (1-Hour ozone);
- SCAQMD v. U.S. EPA, U.S. Court of Appeals, Ninth Circuit, Case No. 13-73936 (Morongo Redesignation);
- Sierra Club, v. County of Fresno, California Supreme Court Case No. S219783 (amicus brief)  
Sierra Club, et al. v. U.S. EPA, U.S. District Court for Northern District of California Case No. 3:14-CV-04596 (PM2.5 designation to serious); and
- WildEarth Guardians v. U.S. EPA, D.C. Circuit Court Case No. 14-1145 (PM2.5 moderate designation).

It is also necessary for the Board to recess to closed session pursuant to Government Code section 54956.9(a) and 54956.9(d)(4) to consider initiation of litigation (three cases) and pursuant to Government Code section 54956.9(b) due to significant exposure to litigation (one case).

In addition, it is necessary for the Board to recess to closed session pursuant to Government Code section 54957.6 to confer regarding upcoming labor negotiations with:

- designated representatives regarding represented employee salaries and benefits or other mandatory subjects within the scope of representation [Negotiator: William Johnson; Represented Employees: SCAQMD Professional Employees Association].

## **ADJOURNMENT**

**\*\*\*PUBLIC COMMENTS\*\*\***

**Members of the public are afforded an opportunity to speak on any listed item before or during consideration of that item. Please notify the Clerk of the Board, (909) 396-2500, if you wish to do so. All agendas are posted at SCAQMD Headquarters, 21865 Copley Drive, Diamond Bar, California, at least 72 hours in advance of the meeting. At the end of the agenda, an opportunity is also provided for the public to speak on any subject within the SCAQMD's authority. Speakers may be limited to three (3) minutes each.**

**Note that on items listed on the Consent Calendar and the balance of the agenda any motion, including action, can be taken (consideration is not limited to listed recommended actions). Additional matters can be added and action taken by two-thirds vote, or in the case of an emergency, by a majority vote. Matters raised under Public Comments may not be acted upon at that meeting other than as provided above.**

**Written comments will be accepted by the Board and made part of the record, provided 25 copies are presented to the Clerk of the Board. Electronic submittals to [cob@aqmd.gov](mailto:cob@aqmd.gov) of 10 pages or less including attachment, in MS WORD, plain or HTML format will also be accepted by the Board and made part of the record if received no later than 5:00 p.m., on the Tuesday prior to the Board meeting.**

**ACRONYMS**

AQIP = Air Quality Investment Program	NESHAPS = National Emission Standards for Hazardous Air Pollutants
AVR = Average Vehicle Ridership	NGV = Natural Gas Vehicle
BACT = Best Available Control Technology	NO <sub>x</sub> = Oxides of Nitrogen
Cal/EPA = California Environmental Protection Agency	NSPS = New Source Performance Standards
CARB = California Air Resources Board	NSR = New Source Review
CEMS = Continuous Emissions Monitoring Systems	PAMS = Photochemical Assessment Monitoring Stations
CEC = California Energy Commission	PAR = Proposed Amended Rule
CEQA = California Environmental Quality Act	PHEV = Plug-In Hybrid Electric Vehicle
CE-CERT =College of Engineering-Center for Environmental Research and Technology	PM <sub>10</sub> = Particulate Matter ≤ 10 microns
CNG = Compressed Natural Gas	PM <sub>2.5</sub> = Particulate Matter ≤ 2.5 microns
CO = Carbon Monoxide	PON = Public Opportunity Notice
CTG = Control Techniques Guideline	PR = Proposed Rule
DOE = Department of Energy	RFP = Request for Proposals
EV = Electric Vehicle	RFQ = Request for Quotations
FY = Fiscal Year	SCAG = Southern California Association of Governments
GHG = Greenhouse Gas	SIP = State Implementation Plan
HRA = Health Risk Assessment	SO <sub>x</sub> = Oxides of Sulfur
IAIC = Interagency AQMP Implementation Committee	SOON = Surplus Off-Road Opt-In for NO <sub>x</sub>
LEV = Low Emission Vehicle	SULEV = Super Ultra Low Emission Vehicle
LNG = Liquefied Natural Gas	TCM = Transportation Control Measure
MATES = Multiple Air Toxics Exposure Study	ULEV = Ultra Low Emission Vehicle
MOU = Memorandum of Understanding	U.S. EPA = United States Environmental Protection Agency
MSERCs = Mobile Source Emission Reduction Credits	VOC = Volatile Organic Compound
MSRC = Mobile Source (Air Pollution Reduction) Review Committee	VMT = Vehicle Miles Traveled
NATTS =National Air Toxics Trends Station	ZEV = Zero Emission Vehicle



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BOARD MEETING DATE: March 6, 2015

AGENDA NO. 1

MINUTES: Governing Board Monthly Meeting

SYNOPSIS: Attached are the Minutes of the February 6, 2015 meeting.

**RECOMMENDED ACTION:**

Approve Minutes of the February 6, 2015 Board Meeting.

Sandra McDaniel,  
Clerk of the Boards

SM:dg

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**FRIDAY, FEBRUARY 6, 2015**

Notice having been duly given, the regular meeting of the South Coast Air Quality Management District Board was held at District Headquarters, 21865 Copley Drive, Diamond Bar, California. Members present:

William A. Burke, Ed.D., Chairman  
Speaker of the Assembly Appointee

Mayor Dennis R. Yates, Vice Chairman  
Cities of San Bernardino County

Mayor Michael D. Antonovich (arrived at 9:25 a.m. and left at 11:50 a.m.)  
County of Los Angeles

Mayor Ben Benoit  
Cities of Riverside County

Supervisor John J. Benoit  
County of Riverside

Councilmember Michael A. Cacciotti  
Cities of Los Angeles County – Eastern Region

Dr. Joseph K. Lyou  
Governor's Appointee

Councilmember Judith Mitchell  
Cities of Los Angeles County – Western Region

Supervisor Shawn Nelson  
County of Orange

Dr. Clark E. Parker, Sr.  
Senate Rules Committee Appointee

Mayor Miguel A. Pulido (left at 9:45 a.m.)  
Cities of Orange County

Supervisor Janice Rutherford  
County of San Bernardino

Member absent:

Councilmember Joe Buscaino  
City of Los Angeles

**CALL TO ORDER:** Chairman Burke called the meeting to order at 9:05 a.m.

- Pledge of Allegiance: Led by Mayor Pulido.
- Opening Comments

Councilmember Mitchell. Announced that she attended the Low-Carbon Fuels Summit held in Sacramento on February 3, 2015, and moderated a panel on the Next Steps for Clean Fuels Policies. She noted that meeting the 2020 low-carbon fuels standard requires a lot of work to be done in this arena.

Councilmember Cacciotti. Explained discussions he was involved in while riding on various buses to get to today's meeting, in which he spoke to bus drivers and passengers about their experiences with riding CNG and electric-powered buses, and noted that most expressed a preference towards the electric buses. He also encouraged his fellow Board Members to take mass transit to the mobile Board meeting on March 6, 2015 to be held at the City of Long Beach Council Chamber.

Dr. Lyou. Noted that he also attended and participated on a panel at the Low-Carbon Fuels Summit on February 3, 2015. He expressed optimism for a shift towards more interest in cleaner transportation fuels, along with changing policies that will further encourage that shift. He announced that, in late January, he toured the BYB facility in Lancaster, and along with transit buses, they have developed a longer-range EV coach bus, and are planning to develop all-electric drayage and yard hosteler equipment.

Supervisor Benoit. Noted that there is a facility in Riverside that is converting older buses to electric-powered for a fraction of the cost of a new vehicle, and encouraged the offering of grant funds for retrofit projects. He noted that he participated in the "Flip the Switch" ceremony held at Bubbling Wells Elementary School on February 4, 2015 commemorating the completion of the first district-owned solar structures in the Palm Springs Unified School District. He noted that these solar systems were funded by the Sentinel Mitigation fund, and he discussed additional projects to reduce or mitigate emissions in the Coachella Valley that have also been made possible with the 50 million dollar mitigation funds.

Chairman Burke. Expressed excitement for the benefits those projects will have on the Coachella Valley region. He thanked staff for their efforts in carrying out an exceptional event at the *A Martin Luther King, Jr. Day of Service Forum* in Los Angeles on January 17, 2015.

(Supervisor Antonovich arrived at 9:25 a.m.)

- Presentation of Retirement Awards to Phillip Szymanski and Lawrence Watkins

Chairman Burke presented a retirement award to Phillip Szymanski, Air Quality Inspector III, in recognition of over 26 years of dedicated District service; and to Lawrence Watkins, Program Supervisor, in recognition of over 26 years of dedicated District service.

- Swearing In of Board Members Michael D. Antonovich and Joseph K. Lyou and New Board Member Janice Rutherford

Chairman Burke administered the oath of office to Michael D. Antonovich, who was reappointed to the Board by the Los Angeles County Board of Supervisors, for a term ending January 15, 2019; to Joseph K. Lyou, Ph.D. who was reappointed to the Board by Governor Edmund G. Brown, for a term ending January 15, 2019; and to Janice Rutherford who was appointed to the Board by the San Bernardino County Board of Supervisors, for a term ending January 15, 2019.

- Presentation to Outgoing Board Member Josie Gonzales

Chairman Burke presented an award to Josie Gonzales for her service on the Board from January 2009 to January 2015 as the representative for the County of San Bernardino.


Supervisor Gonzales reflected upon her experiences while serving on the Board and commented on the progress towards cleaner air that she hopes will continue in the future.

(Mayor Pulido left at 9:45 a.m., prior to the Consent Calendar)

## **CONSENT CALENDAR**

1. Approve Minutes of January 9, 2015 Board Meeting

### **Budget/Fiscal Impact**

2. Amend Contract with Norton Engineering for NOx RECLAIM Technical Evaluation
3. Recognize Funds, Adopt Resolution to Extend Caltrans Grant Agreement, and Execute and Amend Contracts
4. Recognize Funds and Execute Contract for Heavy-Duty Advanced Technology Assessment 

5. Execute Contracts for Advanced Optical Remote Sensing Technologies at Refineries, Other VOC Sources and Marine Vessels
6. Approve Contract Awards and Modifications Approved by MSRC

**Items 7 through 12 - Information Only/Receive and File**

7. Legislative and Public Affairs Report
8. Hearing Board Report
9. Civil Filings and Civil Penalties Report
10. Lead Agency Projects and Environmental Documents Received by SCAQMD
11. Rule and Control Measure Forecast
12. Status Report on Major Projects for Information Management Scheduled to Start During Last Six Months of FY 2014-15

Dr. Lyou announced his abstention on Item No. 3 because Waste Management is a potential source of income to him, and on Item No. 4 because Southern California Gas Company is a potential source of income to him. Mayor Benoit announced his abstention on Item No. 3 because of a campaign contribution from Waste Management, and on Item No. 4 because of a campaign contribution from Southern California Gas Company. Supervisor Benoit announced his abstention on Item No. 3 because of a campaign contribution from Waste Management, and on Item No. 4 because of a campaign contribution from Southern California Gas Company.

Agenda Item Nos. 4, 5 and 11 were withheld for discussion and comment.

MOVED BY CACCIOTTI, SECONDED BY LYOU, AGENDA ITEMS 1 THROUGH 3, 6 THROUGH 10 AND 12 APPROVED AS RECOMMENDED, ADOPTING RESOLUTION NO. 15-2 REQUESTING THE CALIFORNIA DEPARTMENT OF TRANSPORTATION TO EXTEND FUNDING OF AGREEMENT, BY THE FOLLOWING VOTE:

AYES: Antonovich, B. Benoit (*except Item #3*), J. Benoit (*except Item #3*), Burke, Cacciotti, Lyou (*except Item #3*), Mitchell, Nelson, Parker, Rutherford and Yates.

NOES: None.

ABSTAIN: B. Benoit (*Item #3 only*), J. Benoit (*Item #3 only*) and Lyou (*Item #3 only*).

ABSENT: Buscaino and Pulido.

13. Items Deferred from Consent Calendar -

4. Recognize Funds and Execute Contract for Heavy-Duty Advanced Technology Assessment 

Mayor Benoit, Supervisor Benoit and Dr. Lyou left the room during discussion of Item No. 4.

Dr. Tom Williams, Citizens Coalition for a Safe Community, stressed the importance of expanding the scope of this particular item to include railroad operations.

5. Execute Contracts for Advanced Optical Remote Sensing Technologies at Refineries, Other VOC Sources and Marine Vessels

Jesse Marquez, Coalition for a Safe Environment, expressed support for the proposed project so that the public may have access to more complete, accurate data.

11. Rule and Control Measure Forecast

Dr. Tom Williams, Sierra Club, requested that the Board address climate change in an upcoming rule making.

In response to Councilman Cacciotti's inquiry about the District's involvement with the railroads on cleaner burning engines, Dr. Wallerstein noted that the District is providing funding to MetroLink to replace the oldest locomotives in their fleet with Tier 4 locomotives; participating in continued discussion with Metrolink about the possibility of natural gas

locomotives; and working with manufacturers of locomotives regarding advanced technologies that can reduce both particulate and NOx emissions from locomotives.

MOVED BY CACCIOTTI, SECONDED BY YATES, AGENDA ITEMS 4, 5 AND 11 APPROVED AS RECOMMENDED, BY THE FOLLOWING VOTE:

AYES: Antonovich, Burke, Cacciotti,  
Mitchell, Nelson, Parker,  
Rutherford and Yates.

NOES: None.

ABSTAIN: B. Benoit (*Item #4 only*), J. Benoit (*Item #4 only*) and Lyou (*Item #4 only*).

ABSENT: B. Benoit, J. Benoit, Buscaino,  
Lyou and Pulido.

### **BOARD CALENDAR**

14. Administrative Committee
15. Legislative Committee
16. Mobile Source Committee
17. Stationary Source Committee
18. Technology Committee
19. Mobile Source Air Pollution Reduction Review Committee
20. California Air Resources Board Monthly Report
21. Status Report on Regulation XIII - New Source Review

Item No. 15 was withheld for comment.

MOVED BY YATES, SECONDED BY CACCIOTTI, AGENDA ITEMS 14 AND 16 THROUGH 21 APPROVED AS RECOMMENDED, RECEIVING AND FILING THE COMMITTEE, REGULATION XIII AND CARB REPORTS, BY THE FOLLOWING VOTE:

AYES: Antonovich, B. Benoit, J. Benoit, Burke, Cacciotti, Lyou, Mitchell, Nelson, Parker, Rutherford and Yates.

NOES: None.

ABSENT: Buscaino and Pulido.

15. Legislative Committee

Dr. Tom Williams, Citizens Coalition for a Safe Community, explained that H.R. 5101 should be expanded to include all freight, especially the export of crude oil.

MOVED BY CACCIOTTI, SECONDED BY NELSON, AGENDA ITEM 15 APPROVED AS RECOMMENDED, RECEIVING AND FILING THE LEGISLATIVE COMMITTEE REPORT, AND ADOPTING THE POSITIONS ON LEGISLATION AS SET FORTH BELOW, BY THE FOLLOWING VOTE:

AYES: Antonovich, B. Benoit, J. Benoit, Burke, Cacciotti, Lyou, Mitchell, Nelson, Parker, Rutherford and Yates.

NOES: None.

ABSENT: Buscaino and Pulido.



<b>Agenda Item</b>	<b>Recommendation</b>
H.R. 5101 (Hahn) National Freight Network Trust Fund Act of 2014	Support with Amendments
Proposed Changes to Carl Moyer Program - "The Five Pillars"	Approve

## **PUBLIC HEARING**

### 22. Supplement to 24-hour PM2.5 State Implementation Plan for South Coast Air Basin

Dr. Philip Fine, Assistant DEO/Planning, Rules Development and Area Sources, gave the staff presentation.

In response to Councilman Cacciotti's inquiry about the effect of weather on incidents of exceedance, and about what are considered precursor gases, Dr. Fine explained that during the years with less days of rainfall, there are more days where exceedances occur; and that precursor gases include regulated emissions such as NOx and VOCs, as well as SOx ammonia and direct PM emissions.

The public hearing was opened and the following individuals addressed the Board on Agenda Item 22.

\*DR. JIM STEWART, Sierra Club  
JASON MARTINEZ, Sierra Club  
\*JULIA MAY, Communities for Better Environment  
ALLEN HERNANDEZ, Sierra Club  
MARY VALDERMAR, CHICCAA and Indigenous Drum  
OLLIN KIN, American Indian Movement  
ELIZABETH AYALA, Resident of Riverside  
\*JESSE MARQUEZ, Coalition for a Safe Environment  
\*ADRIAN MARTINEZ, Earthjustice  
ALICIA RIVERA, Communities for Better Environment

Urged the Board to reject the Plan as it does not properly address the ability to reach attainment of the 24-Hour PM2.5 National Ambient Air Quality Standard by 2015; expressed disappointment that no public hearings were held in the Los Angeles and Long Beach harbor communities; and stressed the need for regulations that will truly protect the health and welfare of the residents of the basin. \*(Submitted Written Comments)

HARVEY EDER, Public Solar Power Coalition

Urged the Board to consider the use of solar power to help facilitate the Plan.

ASHLEY HERNANDEZ, Resident of Wilmington

Expressed concern about the lack of notification for potentially harmful air quality events in her community, noting that she often witnesses children and youth continuing to play and exercise outdoors when the AQI is at an unhealthy level.

There being no further public testimony on this item, the public hearing was closed.

In response to Chairman Burke's inquiry about the school notification program, Joe Cassmassi, Planning and Rules Manager, confirmed that the air quality forecast is sent to all area schools on a daily basis via direct electronic communication. Dr. Wallerstein added that notifications for events that will potentially affect air quality, such as incidents of flaring, are also disseminated to those signed up for the District's listserv.

Dr. Wallerstein clarified that this supplement is based on feedback from U.S. EPA on the Plan amendment that they will be taking action on this summer; and noted that the current plan contains a contingency measure in the event attainment could not be met -- NOx RECLAIM program shave to further reduce NOx emissions, and staff plans to propose such an item in the coming months even though it has not yet been triggered. He addressed the 2016 AQMP which will target both ozone and particulate pollution; and suggested that staff could work with stakeholders to identify a set of early action measures that would have priority on the rulemaking schedule to address many of the concerns that were expressed today.

Dr. Lyou expressed concern with the uncertainty to achieve compliance with the standard through this Plan; and stressed the importance of taking action to address the numerous other categories of emissions sources listed in the 2012 Plan.

Councilmember Mitchell noted the District's willingness to work diligently on reducing PM and NOx emissions in order to reach the strict goals set for the coming years; explained that CARB is making considerable efforts to reduce diesel emissions and promote cleaner burning fuels for the mobile source aspect; and expressed support for developing early actions to be incorporated in the 2016 AQMP to address this issue more completely.

Councilman Cacciotti commented on the importance of reducing mobile source emissions and improving the efficiency of the mass transit system to help attain needed reductions.

MOVED BY YATES, SECONDED BY CACCIOTTI, AGENDA ITEM NO. 22 APPROVED AS RECOMMENDED BY STAFF, ADOPTING RESOLUTION NO. 15-3 APPROVING THE SUPPLEMENT TO THE 24-HOUR PM2.5 STATE IMPLEMENTATION PLAN FOR THE SOUTH COAST AIR BASIN AND SUBMITTAL INTO THE SIP; AND DETERMINING THAT THE SUPPLEMENT TO THE 24-HOUR PM2.5 SIP FOR THE SOUTH COAST AIR BASIN IS EXEMPT FROM THE REQUIREMENTS OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT, WITH THE ADDITIONAL DIRECTION FOR STAFF TO MEET WITH STAKEHOLDERS AND DEVELOP A LIST OF EARLY ACTION MEASURES IN THE 2016 AQMP TO SUPPLEMENT THE ACTION TAKEN BY THE BOARD REGARDING ATTAINMENT OF THE 24-HOUR PM2.5 STANDARD, BY THE FOLLOWING VOTE:

AYES: Antonovich, B. Benoit,  
J. Benoit, Burke, Cacciotti,  
Mitchell, Nelson, Parker,  
Rutherford and Yates.

NOES: Lyou.

ABSENT: Buscaino and Pulido.

### **OTHER BUSINESS**

23. Communities for a Better Environment's Request for Hearing Regarding Certification of Negative Declaration in Connection with Permitting Tank Project at Phillips 66 Carson Refinery

Kurt Wiese, General Counsel, provided background information for the petition that was before the Board for consideration.

(Supervisor Antonovich left at 11:50 a.m., during discussion on Item 23.)

The following individuals addressed the Board on Item No. 23.

JULIA MAY, Communities for Better Environment  
\*ALEXANDRA NAGY, Food and Water Watch  
MADGE TORRES, Resident of Carlsbad  
JULIA SCOVILLE, Resident of San Pedro, CBE

DARYL GALE, Resident of Los Angeles  
\*ALFRED CARRILLO, Apostolic Assembly Church  
\*ERIN STEVA, Community Health Council  
\*DAVID MONKAWA, California Nurses Association  
LUZ SOLOCHE, Resident of Wilmington, CBE

Expressed concern that the Phillips 66 tank project will cause adverse environmental impacts as a result of storing and processing heavier crude oils; and urged the Board to protect public health. \*(Submitted Written Comments)

DR. TOM WILLIAMS, Citizen Coalition for Safe Communities  
\*DR. JIM STEWART, Sierra Club,  
\*JACK EIDT, Tar Sands Action SoCal  
\*SUSAN DEMBOWSKI, Resident of Long Beach  
ELIZABETH AYALA, Resident of Riverside  
ALLEN HERNANDEZ, Sierra Club  
PATRICK BONNER, Resident of South Gate  
\*JESSE MARQUEZ, Coalition for a Safe Environment  
JASON MARTINEZ, Sierra Club  
ALICIA RIVERA, Communities for Better Environment  
MARIA RAMOS, Resident of Wilmington  
RUBI RUIZ, Resident of Wilmington  
TERESA FLORES, Resident of Wilmington  
PATRICIA CANTERA, Resident of Wilmington  
RAQUEL RIOS, Resident of Wilmington, CBE  
P. JOSEPH ROSENWALD, Resident of Long Beach  
PATRICK WILLIAMS, Communities for Better Environment

Urged the Board to set a hearing for CBE's Appeal; encouraged the setting of the hearing in the community; and stressed the importance of performing a full EIR to assess the impacts of the project. \*(Submitted Written Comments)

Chairman Burke commented that it appears that no matter what action the Board takes on this matter, the matter will be adjudicated in the court.

MARY VALDERMAR, CHICCAA and Indigenous Drum  
JOE GALLIANI, SouthBay 350 Climate Action Group  
ALICIA RIVERA, Resident of Wilmington, CBE  
ASHLEY HERNANDEZ, Resident of Wilmington, CBE  
\*DR. TOM MURPHY, Progressive Christians Uniting  
OLLIN KIN, American Indian Movement

Urged the Board to listen to their concerns even if they were convinced the matter could only be resolved through the judicial process.  
\*(Submitted Written Comments)

CYRUS MOSLEMI, Certified Law Student, UCI  
YANA GARCIA, Attorney, CBE  
HAYLEY PENAN, Certified Law Student, UCI

Urged the Board to rescind the Negative Declaration, order an EIR, or alternatively, to set a hearing for the appeal filed by CBE.

CURTIS COLEMAN, Attorney

Explained his experience with developing Regulation XII as a former District staff member, and confirmed that the Regulation is not meant to be an after-permit issued appeal mechanism. He noted that the appeal mechanism for issued permits is the Hearing Board, and that CEQA issues are to be handled by the court.

JOCELYN THOMPSON, Attorney representing Phillips 66

Urged the Board to adopt the staff recommendation noting that the Executive Officer's determination was based on a proper review of the project and any additional review of the decision will be vetted through the lawsuit filed by CBE in Superior Court.

Written Comments Submitted by:

Judy Curry, Women for Orange County  
Gisele L. Fong, EndOil/Communities for Clean Ports  
Lori Noflin, Carson Connected  
Melissa Lin Perrella, Natural Resources Defense Council  
Princess Manuel, AF3IRM South Bay  
Michelle Mojica, Mujeres Unidas  
Peter Rosenwald  
Ann Cantrell  
Dennis Arp  
Regina Taylor

In response to inquiries by Dr. Parker and Dr. Lyou, Mr. Wiese confirmed that ultimately, regardless of the Board's decision on the agenda item, the resolution will come from the courts; clarified the authority of the Executive Officer to issue permits and approve CEQA documents; and also confirmed that the authority to hear appeals of permit decisions made by Executive Officer is with the Hearing Board.

Dr. Lyou requested that a meeting of the Refinery Committee be scheduled to discuss the possible impacts on air quality from heavy crudes, with potential attendees including representatives from the refineries, District staff and community members. He also suggested that a public participation guidebook be developed that would clearly describe the ways community members can participate in the various public processes at the SCAQMD.

Dr. Wallerstein noted that the project went through the normal noticing process for a Title V permit, and there was no request for a public hearing under Title V.

Councilmember Mitchell urged for additional notification to potentially affected communities; suggested the benefit of scheduling a symposium or discussion about advantage crudes and their environmental impacts; and commented that it would be prudent for Phillips 66 to establish a relationship with the surrounding communities to ideally lead to better communication between the refinery and the community members.

In response to Councilman Cacciotti's questioning about the various impacts of the pollution, Dr. Wallerstein explained that none of the significance thresholds were exceeded and there was no resulting increase in throughput at the refinery.

Chairman Burke directed staff to schedule a meeting of the Refinery Committee to promote discussion amongst staff, industry representatives and community members regarding heavy crude oils; and also directed staff to develop a guidebook for public participation at the SCAQMD.

THE PETITION BY COMMUNITIES FOR A BETTER ENVIRONMENT TO REQUEST A HEARING REGARDING CERTIFICATION OF NEGATIVE DECLARATION IN CONNECTION WITH PERMITTING TANK PROJECT AT PHILLIPS 66 CARSON REFINERY WAS DENIED BY A UNANIMOUS VOTE OF THE BOARD, AS FOLLOWS:

AYES: B. Benoit, J. Benoit, Burke, Cacciotti, Lyou, Mitchell, Nelson, Parker, Rutherford and Yates.

NOES: None.

ABSENT: Antonovich, Buscaino and Pulido.

**PUBLIC COMMENT PERIOD** – (Public Comment on Non-Agenda Items, Pursuant to Government Code Section 54954.3)

Dr. Tom Williams, Citizens Coalition for a Safe Community and No 710 Coalition, requested that documentation be made available detailing the CEQA process. He explained that the SR710 North Extension EIR/EIS has been delayed and is due to be released within the month of February, and he would like the District to make certain that there are requirements in place to ensure the

ambient air quality will not be affected in the area where two exhaust vents from the tunnel will be located.

Harvey Eder, Public Solar Power Coalition, explained the solar electric generating systems in use at Southern California solar generating facilities; and highlighted the need to produce an air quality plan every 3 years, instead of the 4 years that will pass before the release of the 2016 AQMP.

### **CLOSED SESSION**

The Board recessed to closed session at 1:25 p.m., pursuant to Government Code sections:

- 54956.9(a) and 54956.9(d)(1) to confer with its counsel regarding pending litigation which has been initiated formally and to which the SCAQMD is a party. The action is:

Fast Lane Transportation, Inc. et al. v. City of Los Angeles, et al., Contra Costa County Superior Court Case No. MSN14-0300 (formerly South Coast Air Quality Management District v. City of Los Angeles, et al., Los Angeles Superior Court Case No. BS 143381) (SCIG).

- 54957.6 to confer regarding upcoming labor negotiations with:

designated representatives regarding represented employee salaries and benefits or other mandatory subjects within the scope of representation [Negotiator: William Johnson; Represented Employees: SCAQMD Professional Employees Association].

Following Closed Session, General Counsel Kurt Wiese announced that no reportable actions were taken in closed session.

**ADJOURNMENT**

There being no further business, the meeting was adjourned by Kurt Wiese at 1:45 p.m.

The foregoing is a true statement of the proceedings held by the South Coast Air Quality Management District Board on February 6, 2015.

Respectfully Submitted,

Denise Garzaro  
Senior Deputy Clerk

Date Minutes Approved: \_\_\_\_\_

\_\_\_\_\_  
Dr. William A. Burke, Chairman

**ACRONYMS**

AQI = Air Quality Index  
AQMP = Air Quality Management Plan  
CARB = California Air Resources Board  
CEQA = California Environmental Quality Act  
CNG = Compressed Natural Gas  
EIR = Environmental Impact Report  
EIS = Environmental Impact Study  
EV = Electric Vehicle  
FY = Fiscal Year  
MSRC = Mobile Source (Air Pollution Reduction) Review Committee  
NOx = Oxides of Nitrogen  
PM<sub>2.5</sub> = Particulate Matter ≤ 2.5 microns  
SOx = Oxides of Sulfur  
U.S. EPA = United States Environmental Protection Agency  
VOC = Volatile Organic Compound



BOARD MEETING DATE: March 6, 2015

AGENDA NO. 2

PROPOSAL: Set Public Hearings April 3, 2015 to:

- (A) Amend Regulation IX - Standards of Performance for New Stationary Sources, and Regulation X - National Emission Standards for Hazardous Air Pollutants. Amendments to Regulations IX and X are periodically made to incorporate new or amended federal performance standards that have been enacted by U.S. EPA for stationary sources. These standards are currently in effect and enforceable by SCAQMD pursuant to the federal Clean Air Act, regardless of whether SCAQMD incorporates them into Regulations IX and X. The Board has historically adopted NSPS (40 CFR 60) and NESHAPS (40 CFR 61) into Regulations IX and X, by reference, thus providing stationary sources with a single source of information for determining which federal and local requirements apply to their specific operations. The NSPS and NESHAPS actions by U.S. EPA, primarily from July 1, 2011 to December 31, 2014, are proposed for incorporation into Regulations IX and X, respectively, including new performance standards for certain oil and gas operations not covered by previous EPA regulation. The actions also include amendments to previous provisions of twelve NSPS standards and two NESHAPS standards. (Reviewed: Stationary Source Committee, February 20, 2015)
  
- (B) Receive Public Input on Executive Officer's Draft Goals & Priority Objectives for FY 2015-16. A set of draft goals for the FY 2015-16 Budget has been developed. The Executive Officer wishes to receive public and Board Member input on these goals and priority objectives as they serve as the foundation of SCAQMD's Work Program.

The complete text of the proposed amendments, staff reports and other supporting documents will be available from the District's Public Information Center, (909) 396-2550 and on the Internet ([www.aqmd.gov](http://www.aqmd.gov)) as of March 4, 2015.

**RECOMMENDED ACTION:**

Set Public Hearings April 3, 2015 to amend Regulations IX and X, and receive public input on the Executive Officer's Draft Goals & Priority Objectives for FY 2015-16.

Barry R. Wallerstein, D.Env.  
Executive Officer

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BOARD MEETING DATE: March 6, 2015

AGENDA NO. 2B

**PROPOSAL:** Set Public Hearing April 3, 2015 to Receive Public Input on Executive Officer's Draft Goals and Priority Objectives for FY 2015-16

**SYNOPSIS:** A set of goals and priority objectives for the FY 2015-16 Budget has been developed. The Executive Officer wishes to receive public and Board Member input on these goals and priority objectives as they serve as the foundation of SCAQMD's Work Program.

**COMMITTEE:** Administrative, February 13, 2015; Recommended for Approval

**RECOMMENDED ACTION:**

Set a Public Hearing on April 3, 2015 to receive public input on the Executive Officer's Goals and Priority Objectives for FY 2015-16.

Barry R. Wallerstein, D.Env.  
Executive Officer

MBO

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**Attachments**

Draft Goals & Priority Objectives for FY 2015-16

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
DRAFT GOALS AND PRIORITY OBJECTIVES FOR FY 2015-16**

**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 2015-16.

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

Priority Objective/Project	Outcome
1. Development of the 2016 AQMP	Develop and adopt a comprehensive attainment strategy using the latest technical and planning assumptions to meet the federal 8-hour ozone (75 ppb) and annual PM2.5 (12 µg/m <sup>3</sup> ) air quality standards by statutory deadlines. The plan will also update the 1-hour ozone and the 1997 8-hour ozone SIPs, as necessary, to demonstrate progress toward attainment. Conduct modeling to demonstrate attainment of the standards with the application of the control strategy. Identify and implement early action measures to further ensure attainment of federal 24-hour PM2.5 standard.
2. Implementation of OEHHA Revised Health Risk Assessment Guidelines	Update and implement policies, rules and associated programs to implement OEHHA Revised Health Risk Assessment Guidelines for SCAQMD (i.e., rule amendments, permitting, AB2588, and CEQA). Provide outreach and training regarding risk communication and implementation of the Revised OEHHA Health Risk Assessment Guidelines.
3. Implementation of socioeconomic analysis enhancements	Implement the action plan approved by the Governing Board at its October 2014 meeting to address the recommendations contained in the November 2014 Abt Associates report.

4. Development of the 2016 Air Toxics Control Plan	In response to the findings in MATES IV, develop a control plan to further reduce air toxics exposure in the Basin. The air toxics control plan will be presented as part of the 2016 AQMP with consistent inventory and modeling methodologies. The control strategy will identify toxic reduction co-benefits from the AQMP and climate change measures.
5. Further develop enhanced emissions/ambient monitoring capabilities	Conduct comprehensive research by evaluating a variety of advanced optical remote sensing technologies for the purposes of providing SCAQMD and the public with enhanced real- and near-real-time monitoring capabilities that will ultimately result in improved control efficiencies and compliance. Four advanced optical technologies will be initiated and demonstrated in the field to characterize fugitive VOC emissions from refineries, gas stations, oil wells, and other small point sources. Complete in-stack and ambient real-time metals monitoring demonstration.
6. Demonstration programs for CNG police vehicles and zero-emission police vehicles	Develop and demonstrate alternative fuel and zero-emission police vehicles in the South Coast. Initiate contracts for the development of a CNG police pursuit vehicle and a zero-emission pursuit vehicle. The vehicles (cars, trucks and motorcycles) will be part of a loaner program to gain real-world experience for both police departments and the technology providers.
7. Zero-emission lawn and garden equipment	Conduct a loaner program for zero-emission lawn and garden equipment to promote their environmental benefits and efficacy in a commercial environment, including local government.
8. Next-generation natural gas engine/hybrid vehicles	Develop natural gas heavy-duty engines that are 90% cleaner than current emissions standard for NOx, including the option for integration with hybrid systems and alternative fuels that will provide additional NOx reductions.
9. Develop and demonstrate zero-emission goods movement technologies	Continue to work with the DOE, CEC, the Ports and others to develop and demonstrate zero-emission miles in goods movement technologies. Coordinate these actions with policy efforts in Washington DC and national outreach efforts to develop a supportive stakeholder network.
10. Updating and enhancements to the Carl Moyer Program	Pursue legislative changes to the Carl Moyer Program through the joint efforts of CARB and CAPCOA to enhance the program objectives by allowing expansion of project categories, leveraging of funds, inclusion of greenhouse gases, increasing cost-effectiveness limit to fund advanced technologies, and improving implementation efficiency.
11. Proposition 1B-Goods Movement Program	Secure SCAQMD's share of funds for the last round of bond sales (estimated to be around \$240 million), and implement goods movement modernization projects in accordance with CARB's program guidelines.
12. Incentive Funding Programs	Continue the implementation of the Carl Moyer, Lower-Emission School Bus, Lawnmower Exchange, fireplace/woodstove conversion (Mira Loma area), and other incentive funding programs to achieve early and surplus emissions reductions.

<p>13. Ensure compliance through a program that includes using community-based and/or industry-specific deployment of field personnel</p>	<p>Inspect all Major or RECLAIM sources at least annually and inspect all chrome plating facilities quarterly. Conduct a total of 20,000 site visits for compliance evaluations and perform inspections of 3,300 portable equipment and 1,800 Asbestos demolition or renovation activities. Continue targeted evaluation program for select industries, including but not limited to, metal processing, and oil production. Conduct 40 Team Inspections at selected facilities.</p>
<p>14. Ensure compliance through a program that includes timely processing of permit applications for stationary sources</p>	<p>Process a total of 7,000 applications, including 1,800 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. Continue the program's expanded outreach to help ensure continued compliance through efforts to more widely distribute the Air Quality Permit Checklist and through the ongoing Expired Permit Outreach Program. Continue to hold meetings with the permit streamlining working groups.</p>
<p>15. Continue to implement SCAQMD's Environmental Justice (EJ) policies and programs, and other initiatives directed at equitable treatment for all communities and sensitive populations</p>	<p>Work with residents and community leaders in disproportionately impacted communities to remedy their air quality concerns. Increase partnerships with health, educational, and other organizations in impacted communities. Better communicate, coordinate and streamline agency response to EJ-related concerns. Prioritize 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.</p>
<p>16. Enhance community response program</p>	<p>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. Examine how social media can be incorporated into the program to provide timely information to the general as well as impacted public.</p>
<p>17. Prioritize prosecution of high-impact enforcement cases to maximize deterrence for air pollution violations and protect public health</p>	<p>Enhance prosecution of high-impact enforcement cases, such as prosecutions of major or serial violators, major air toxics 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.</p>
<p>18. Work proactively on drought-related air quality impacts and needed response</p>	<p>Continue implementation of drought response plan and revise as necessary.</p>
<p>19. Develop and demonstrate low-emission energy generation technology as well as energy storage options</p>	<p>Continue demonstration projects and continue working with stakeholders to facilitate additional power options.</p>

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

<b>Priority Objective/Project</b>	<b>Outcome</b>
1. Continue implementation of the Clean Communities Plan Pilot Studies in Boyle Heights and San Bernardino and complete implementation of the U.S. EPA Targeted Air Shed Grant	Complete the implementation of the Clean Communities Plan Pilot Studies in Boyle Heights and San Bernardino.
2. Fully deploy newly established testing center, AQ-SPEC	Conduct large-scale testing of emerging “low-cost sensors” for accuracy and performance, communicate findings to the public and explore collaborative opportunities with entities interested in utilizing such sensors for community-based monitoring.
3. Demonstrate viability for car scrapping and vouchers for cleaner vehicles in disadvantaged communities	Complete pilot programs to encourage disadvantaged community members to participate more fully in the Enhanced Fleet Modernization Program (EFMP). Provide enhanced outreach and incentives for users to scrap their eligible vehicles and obtain vouchers for cleaner new and used vehicles or transit passes.
4. Employ the latest communication technologies; engage in community based programs and outreach events; and foster relationships with traditional media outlets	Creatively and actively engage the public, through town hall and community meetings, specifically themed or targeted outreach events linked to public interest and environmental and health concerns. Further improve agency engagement with the public through more effective use of website and social and digital media tools (i.e. smartphone app, the digital Advisor, Facebook, Twitter), as well as the integration of other possible communication platforms. Launch a comprehensive social media campaign.
5. Continue timely response to community complaints	Respond to all air quality complaints received by SCAQMD in a timely manner.

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

<b>Priority Objective/Project</b>	<b>Outcome</b>
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 and opportunities 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	Continue the phased replacement of server and desktop hardware and software. Expand server virtualization and private cloud capabilities, along with public cloud capabilities. Explore the implementation of a Big Data Analytics platform for agency use. Complete work with Legal’s Contractor to implement and integrate CourtView’s JWorks caseload management software. Complete data migration, document management, and synchronization among systems that share case-related information. Continue modernization of SCAQMD business applications by developing and implementing a web-based portal to provide compliance, financial, and permitting information to improve overall agency effectiveness and operational activities.

	Expand GIS infrastructure to provide enhanced access capabilities across all computing devices including desktops, laptops, tablets and mobile phones. Continue expansion of SCAQMD's e-government/e-commerce capabilities by providing on-line permit application and compliance notification form filing.
3. Provide excellent customer service to all 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 priorities of public health protections, 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. 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, health-based organizations, and community groups – especially environmentally conscientious youth groups – through outreach to, and participation in, various activities, conferences, and other opportunities to cultivate early and continuing cooperative relationships. Build relationships outside of California to broaden support for SCAQMD's federal priorities.
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.



BOARD MEETING DATE: March 6, 2015

AGENDA NO. 3

**PROPOSAL:** Adopt Resolution Recognizing Funds and Accepting Terms and Conditions for FY 2014-15 Carl Moyer Program Award, Issue Program Announcements for Carl Moyer Program and SOON Provision, and Execute and Amend Contracts

**SYNOPSIS:** These actions are to adopt a resolution recognizing \$25,523,118 in Carl Moyer Program grant awards from CARB under SB 1107 with its terms and conditions for FY 2014-15 and to approve the release of Program Announcements for the FY 2014-15 “Year 17” Carl Moyer Program and SOON Provision to provide incentive funding for low-emitting on- and off-road vehicles and equipment. Additionally, these actions are to execute contracts in the amount of \$2,533,900 from the Carl Moyer Program SB 1107 Fund (32) and amend contracts in the amount of \$199,659 from the Carl Moyer and Proposition 1B Programs.

**COMMITTEE:** Technology, February 20, 2015; Recommended for Approval

**RECOMMENDED ACTIONS:**

1. Adopt the attached resolution recognizing upon receipt up to \$25,523,118 from CARB into the Carl Moyer Program SB 1107 Fund (32) and accepting terms and conditions of the FY 2014-15 Carl Moyer grant award.
2. Approve issuance of Program Announcement #PA2015-07 to solicit projects for the FY 2014-15 “Year 17” Carl Moyer Memorial Air Quality Standards Attainment Program.
3. Approve issuance of Program Announcement #PA2015-08 to solicit projects for the SOON Provision.
4. Authorize the Chairman to execute the following Carl Moyer Program contracts with funds from the Carl Moyer Program SB 1107 Fund (32) for a total of up to \$2,533,900:
  - a. Energia Logistics to electrify a marine vessel to receive shore power in an amount not to exceed \$336,000; and

- b. Rentrac, Inc. for the replacement of four off-road vehicles with two off-road vehicles retrofitted with diesel particulate filters in an amount not to exceed \$2,197,900.
5. Authorize the Chairman to amend contracts with the following entities:
- a. Mountain Top Quarries, LLC to increase the vehicle annual usage, decrease the number of vehicles to be replaced resulting in additional emission reductions and increase the funding amount by \$49,659 for a new total amount of \$2,305,612 from the Carl Moyer Program AB 923 Fund (80); and
  - b. Clean Fuel Connection, Inc. for technical assistance with the Proposition 1B-Goods Movement truck projects in an amount not to exceed \$150,000 from the administrative portion of the Proposition 1B-Goods Movement Program Fund (81).

Barry R. Wallerstein, D.Env.  
Executive Officer

MMM:FM

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## **Background**

The Carl Moyer Memorial Air Quality Standards Attainment Program (CMP) and the Surplus Off-Road Opt-in for NO<sub>x</sub> (SOON) Provision provide funding on an incentive basis for the incremental cost of purchasing cleaner than required engines and equipment. Both programs are funded with the Carl Moyer Program SB 1107 and AB 923 funds. This is the 17<sup>th</sup> year of the CMP and the 11<sup>th</sup> year of the program with funding from SB 1107 and AB 923.

## **Proposal**

### *Carl Moyer Program*

This action is to adopt the attached resolution recognizing upon receipt up to \$25,523,118 from CARB into the Carl Moyer Program SB 1107 Fund (32) for implementation of the FY 2014-15 “Year 17” CMP and accepting the terms and conditions of the FY 2014-15 Carl Moyer Grant award. Of the \$25,523,118 amount, \$24,246,962 is designated for projects funding and \$1,276,156 for administrative and outreach efforts. In addition, \$3,828,468 is required from the SCAQMD as the local match, which will be provided from AB 923 funds.

This action is to also approve the issuance of Program Announcements #PA2015-07 and #PA2015-08 for the Carl Moyer Program and the SOON Provision, respectively. The minimum amounts of available funding are approximately \$23 million for the Carl Moyer Program and \$5 million for the SOON Provision. Additional funds may become available by the time of award approval, upon which more projects will be awarded up to the total amount of funds available. A detailed account of available funds from the Carl

Moyer Program Fund, including earned interest and the split between the SB 1107 and the AB 923 funds, will be outlined at the time of award recommendations.

The PAs are issued based on the current program guidelines approved by CARB. The Carl Moyer PA outlines the proposed minimum funding allocations and the maximum allowed cost-effectiveness limit for each project category and solicits projects for on-road vehicles, off-road vehicles of small and medium size fleets, locomotives, marine and port applications and other vehicles and equipment. The SOON Provision PA solicits projects for off-road vehicles in large fleets. As in previous years, SCAQMD will only fund diesel-to-diesel applications when alternative fuel engines/vehicles are not commercially available or certified by CARB except for emergency vehicles. Approval of emergency vehicle applications will be on a case-by-case basis. Proposals for all categories will be due by 1:00 pm on Wednesday, June 3, 2015. Staff expects to finalize the review and evaluation of the proposals and recommend awards for Board approval at the September and October 2015 Board meetings. The Carl Moyer Program and the SOON Provision PAs are attached.

Additionally, this action is to approve the execution of two contracts using funds from the Carl Moyer Program SB 1107 Fund (32) for a total amount not to exceed \$2,533,900 with Energia Logistics to electrify a marine vessel to receive shore power and Rentrac to replace four existing diesel vehicles with two newer low-emitting diesel vehicles retrofitted with diesel particulate filters. Applications for these projects were submitted under the “Year 16” Carl Moyer Program solicitation. Since then, and in cooperation with the applicants, staff has completed the evaluation of these projects.

Finally, this action is to amend a contract with Mountain Top Quarries, LLC to increase annual vehicle usage, decrease the number of vehicles to be replaced from seven to five resulting in additional emission reductions, and increase the funding amount by \$49,659 for a new total amount of \$2,305,612 from the Carl Moyer Program AB 923 Fund (80).

These projects will result in 84.2 tons/year of NO<sub>x</sub>, and 1.9 tons/ year of PM emissions reductions.

#### Technical Assistance

This action is to amend a contract with Clean Fuel Connection, Inc. (CFCI) for technical assistance for the Proposition 1B-Goods Movement truck projects in an amount not to exceed \$150,000 from the administrative portion of the Proposition 1B-Goods Movement Program Fund (81). Implementation of about 2,000 truck projects under the Proposition 1B Program, combined with preparation of reports for over 4,500 trucks and other program requirements with limited staffing, necessitates the need for technical assistance. Through a public solicitation process in March 2014, CFCI was previously selected from a competitive list of applicants to provide technical assistance for the Proposition 1B

Program. The continuation of CFCI's services is needed for the timely implementation of program requirements.

### **Outreach**

In accordance with SCAQMD's Procurement Policy and Procedure, a public notice advertising the RFP/RFQ and inviting bids will be published in the Los Angeles Times, the Orange County Register, the San Bernardino Sun, and Riverside County's Press Enterprise newspapers to leverage the most cost-effective method of outreach to the South Coast Basin.

Additionally, potential bidders may be notified utilizing SCAQMD's own electronic listing of certified minority vendors. Notice of the RFP/RFQ will be emailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associations, and placed on the Internet at SCAQMD's website (<http://www.aqmd.gov> where it can be viewed by making the selection "Grants & Bids."

### **Program Guideline**

At its July 8, 2005 meeting, the SCAQMD Board approved a long-term Program Guideline for the implementation of the Carl Moyer Program in the South Coast Air Basin. The proposed funding distribution for different equipment categories is made in this Board letter according to the criteria outlined in that Guideline with emphasis on the following priorities in order to achieve the highest emission reductions:

- Goods Movement (40 percent allocation)
- Environmental Justice (50 percent allocation)
- Cost-Effectiveness
- Low Emission Engine / Vehicle Preference
- Early Commercialization of Advanced Technologies/Fuels
- Fleet Rules
- School Buses

### **Funding Distribution**

The CMP Guideline includes the requirement that at least 50% of the program funds must be spent in disproportionately impacted areas. At least half the funding allocated under SB 1107 and collected under AB 923 will be awarded to projects located in disproportionately impacted areas. It has been the policy of the SCAQMD to allocate at least 50% of all funding available in the CMP and the SOON Provision, including roll-over funding from previous years and turn-back funds, to disproportionately impacted areas.

### **Disproportionately Impacted Areas Point Ranking**

The requirements of the CMP and the SOON Provision will be implemented according to the following criteria.

- 1) All projects must qualify by meeting the cost-effectiveness limits established in the Program Announcement.
- 2) All projects will be evaluated according to the following criteria to qualify for funding as a disproportionately impacted area:
  - a) Poverty Level: Detailed socioeconomic information is not included in the 2010 Census. Such data is collected yearly from a small percentage of the population on a rotating basis by the American Community Survey (ACS). All projects in areas where at least 10 percent of the population falls below the federal poverty level based on the 2008-2012 ACS data are eligible to be included in this category, and
  - b) PM<sub>2.5</sub> Exposure: All projects in areas with the highest 15 percent of PM<sub>2.5</sub> concentration measured within a 2 km grid will be eligible to be ranked in this category. The highest 15 percent of PM<sub>2.5</sub> concentration is 11.10 micrograms per cubic meter and above, on an annual average, or
  - c) Air Toxics Exposure: All projects in areas with a cancer risk of 865 in a million and above (based on MATES III estimates) will be eligible to be ranked in this category.

The maximum score will be comprised of 40 percent for poverty level and 30 percent each for PM and toxic exposures. Special circumstances exist in some areas, such as the Ports of Long Beach and Los Angeles. Since there are no residents within the ports, poverty ranking could not be established. In this case, the poverty ranking from the adjacent on-shore areas was extended to the ports since these populated areas are directly impacted by port activities.

### **Benefits to SCAQMD**

The SCAQMD has supported a number of activities directed to the advancement of new technologies and commercialization of low-emission alternative fuel technologies. The successful implementation of the Carl Moyer Program and the SOON Provision are direct results of these technology advancement activities. The vehicles and equipment funded under these Program Announcements will operate many years, providing long-term emission reductions.

### **Resource Impacts**

CARB has allocated \$25,523,118 to the SCAQMD under SB 1107 for implementation of the FY 2014-15 "Year 17" CMP. Of this amount, \$24,246,962 is designated for project funding and \$1,276,156 for administrative and outreach efforts. These funds shall be recognized into the Carl Moyer Program SB 1107 Fund (32). In addition, \$3,828,468 is required as the local match from the SCAQMD, which will be provided from AB 923 funds.

The contract with Energia Logistics shall not exceed \$336,000 and the contract with Rentrac, Inc. shall not exceed \$2,197,900, for a total funding amount of \$2,533,900 from

the Carl Moyer Program SB 1107 Fund (32). In addition, the total funding increase for the contract amendment with Mountain Top Quarries, LLC shall not exceed \$49,659 from the Carl Moyer Program AB 923 Fund (80). The total funding increase for the contract amendment with CFCI shall not exceed \$150,000 from the Proposition 1B-Goods Movement Program Fund (81).

**Attachments**

1. A Resolution of the South Coast Air Quality Management District Board Recognizing Funds and Accepting the Terms and Conditions of the FY 2014-15 Carl Moyer Grant Award
2. Carl Moyer Program Announcement #PA2015-07
3. SOON Provision Program Announcement #PA2015-08

**RESOLUTION NO. 15-**

**A Resolution of the South Coast Air Quality Management District Board  
Recognizing Funds and Accepting the Terms and Conditions of the  
FY 2014-15 Carl Moyer Grant Award**

WHEREAS, under Health & Safety Code §40400 *et seq.*, the South Coast Air Quality Management District (SCAQMD) is the local agency with the primary responsibility for the development, implementation, monitoring and enforcement of air pollution control strategies, clean fuels programs and motor vehicle use reduction measures; and

WHEREAS, the SCAQMD is authorized by Health & Safety Code §§40402, 40440, and 40448.5 to implement programs to reduce transportation emissions, including programs to encourage the use of alternative fuels and low-emission vehicles; to develop and implement other strategies and measures to reduce air contaminants and achieve the state and federal air quality standards; and

WHEREAS, the Board has adopted several programs to reduce emissions from on-road and off-road vehicles, as well as emissions from other equipment, including the School Bus Incentive Program and the Carl Moyer Program; and

WHEREAS, the SCAQMD is designated as an extreme non-attainment area for ozone and as such is required to utilize all feasible means to meet national ambient air quality standards.

THEREFORE, BE IT RESOLVED that the Board of the SCAQMD, State of California, in regular session assembled on March 6, 2015, does hereby accept the terms and conditions of the FY 2014-15 (Year 17) Carl Moyer Program grant award and recognizes up to \$25,523,118 in SB 1107 funds.

BE IT FURTHER RESOLVED that the Executive Officer is authorized and directed to take all steps necessary to carry out this Resolution.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Clerk of the Board



**2015  
CARL MOYER MEMORIAL  
AIR QUALITY STANDARDS ATTAINMENT PROGRAM  
PROGRAM ANNOUNCEMENT  
“Year 17”**

**SCAQMD PROGRAM ANNOUNCEMENT  
#PA2015-07**

The South Coast Air Quality Management District (SCAQMD) is seeking project applications for the following purpose according to terms and conditions attached. In the preparation of this Program Announcement (PA) the words “Proposer,” “Applicant,” “Contractor,” and “Consultant” are used interchangeably.

**SECTION I – OVERVIEW**

**PURPOSE**

The SCAQMD is seeking applications for the 2015 Carl Moyer Memorial Air Quality Standards Attainment Program (CMP), referred to as “Year 17”.

**Funding for this PA will be approximately \$23 million, from the CMP Fund.**

The purpose of the CMP is to achieve near-term emission reductions of Nitrogen Oxides (NO<sub>x</sub>), Particulate Matter (PM<sub>10</sub>) and Reactive Organic Gases (ROG) from heavy- and medium-duty vehicles and equipment operating in California as early and as cost-effectively as possible. The CMP provides financial incentives to assist in the purchase of low-emission heavy- and medium-duty engine technologies to achieve emission reductions that are real, surplus and quantifiable.

This Program Announcement (PA) was prepared based on the Approved Revision of the Carl Moyer Program (CMP) Guidelines dated July 11, 2014, which is available online at: <http://www.arb.ca.gov/msprog/moyer/guidelines/current.htm>.

All applications will be evaluated based on criteria set forth in this PA, the CMP Guidelines, and all subsequent updates and modifications/advisories; up to date CMP information may be obtained at Carl Moyer Program Web page at <http://www.arb.ca.gov/msprog/moyer/moyer.htm>.

**INTRODUCTION**

CMP funding is provided via two legislative bills, SB 1107 and AB 923. SB 1107 provides approximately \$61 million a year in statewide funding, and AB 923 permits air districts in designated non-attainment areas to collect an additional two dollars in vehicle registration fees to expend on programs to reduce emissions from vehicular sources and off-road equipment. A resolution approving such fees was adopted by the SCAQMD Board on December 3, 2004.



## FUNDING CATEGORIES

The specific project categories identified for funding under the SCAQMD's 2015 CMP solicitation are:

### On-Road Heavy-Duty Vehicles

- On-Road Heavy-Duty Vehicle projects must generate surplus emission reductions. Therefore, all vehicles subject to California Air Resources Board's (CARB's) Fleet Rules, including but not limited to the Statewide Truck & Bus Regulation, Solid Waste Collection Vehicle Rule, Public Agencies & Utilities Fleet Rule and Drayage Truck Regulation, significantly reduce if not eliminate funding opportunities. **The remaining funding opportunities apply exclusively to emergency vehicles and to fleets of three (3) or fewer vehicles.** Eligible Emergency Vehicle projects are those in which a new or used replacement vehicle with an engine meeting the current model year California emission standard replaces an older, more polluting fire apparatus.
- A larger fleet (four or more vehicles) may be eligible for a small percentage of funding if the fleet is currently in compliance with the applicable CARB Fleet Regulation. The percentage of funding will be determined by the amount of surplus emission reductions that are generated a minimum of one year prior to regulatory requirements.

### Off-Road Heavy-Duty Equipment/Engines

- Off-Road Heavy-Duty Equipment/Engines, including but not limited to construction equipment, marine engines, shore power, locomotives, agricultural tractors, zero-emission rubber-tired gantry (RTG) crane and other cargo handling equipment.

Refer to CARB's fleet rule websites that provide detailed information on compliance with these regulations. These are listed below in Section VI.

## GENERAL PROGRAM INFORMATION

All project awards shall not exceed the maximum cost-effectiveness limit of \$17,720 per ton of weighted emissions reduced unless revised by CARB prior to SCAQMD awards. All projects must meet the criteria stated in this PA, Appendix A and the CMP Guidelines. Cost-effectiveness is based on NO<sub>x</sub>, ROG and PM reductions. Project cost-effectiveness is calculated according to the following formula:

$$\frac{\text{Annualized Cost (\$/year)}}{[\text{NO}_x \text{ reduction} + 20(\text{combustion PM}_{10} \text{ reduction}) + \text{ROG reduction}] \text{ (tons/year)}}$$

All projects must be operational within eighteen (18) months of contract execution or by May 19, 2017, whichever is earlier. Some projects may have earlier in-service operation date requirements, if they are subject to CARB regulations.

It is the applicant's responsibility to ensure that the most current information and requirements are reflected in a submitted application. Applicants should check the CARB website for updates and advisories to the guidelines ([www.arb.ca.gov/msprog/moyer/moyer.htm](http://www.arb.ca.gov/msprog/moyer/moyer.htm)).

In cases of conflict between CARB guidelines and SCAQMD criteria, the more stringent criteria will prevail. SCAQMD will post any new information and requirements on its CMP Web page at [www.aqmd.gov/Moyer](http://www.aqmd.gov/Moyer).

Projects subject to CARB regulations must submit a copy of the most recent CARB compliance report(s) or other documentation that provides SCAQMD with clear understanding of the applicant's fleet rule compliance status.

**All emission reductions resulting from funded projects will be retired by the SCAQMD.** To avoid double counting of emission reductions, project vehicles and/or equipment may not receive funding from any other government grant program that is designed to reduce mobile source emissions. These programs include, but are not limited to:

- Proposition 1B Bond program
- All Mobile Source Air Pollution Reduction Review Committee (MSRC) Programs
- All CARB Emission Reduction Credit Programs
- State of California School Bus Program
- SCAQMD Lower-Emissions School Bus Replacement Program
- SCAQMD Rule 2202 Air Quality Investment Program
- SCAQMD RECLAIM Air Quality Investment Program for NOx
- Emission credit programs encompassed in the SCAQMD Rule 1600-series and 1309.1
- AB118 funding program

#### **ELIGIBILITY INFORMATION**

Emission reductions obtained through Carl Moyer Program projects must not be required by any federal, state or local regulation, memorandum of agreement/understanding, settlement agreement, mitigation requirement or other legal mandate.

Engines operating under a regulatory compliance extension granted by CARB, an air district or the United States Environmental Protection Agency (U.S. EPA) are not eligible for funding.

A grant recipient subject to an in-use regulation may be eligible to receive CMP funding if the applicant has met all compliance requirements of applicable regulations. Documentation of regulatory compliance must be provided by applicants to air districts at the time of application.

Key program requirements for on- and off-road equipment categories are highlighted below; however, applicants are responsible for consulting the CMP guidelines for additional program limitations/requirements.

#### **ON-ROAD VEHICLES**

All on-road projects must generate surplus emission reductions. Therefore, all vehicles subject to CARB's Fleet Rules, including but not limited to the Statewide Truck & Bus Regulation, Solid Waste Collection Vehicle Rule, Public Agencies & Utilities Fleet Rule, and Drayage Truck Regulation, significantly reduce if not eliminate CMP funding opportunities. **The remaining funding opportunities discussed below apply exclusively to emergency vehicles and fleets of three (3) or fewer heavy-duty trucks.**

The proposed engine for each on-road project must be consistent with the "Intended Service Class" per the CARB Executive Order [medium-heavy duty (MHD) Intended Service Class engines cannot be used for projects which have the heavy-heavy duty (HHD) vehicle

classifications]. Executive Orders for on-road vehicles may be downloaded at:

<http://www.arb.ca.gov/msprog/onroad/cert/cert.php>.

### **Emergency Vehicles**

Eligible emergency vehicle projects are those in which a new or used replacement vehicle with an engine meeting the current model year California emission standard replaces an older, more polluting emergency vehicle. The older, replaced vehicle must be destroyed.

A fire truck reuse option is also available on a case-by-case basis. The fire truck reuse option allows fire departments to give away the existing old vehicle and destroy another older vehicle in its place. Additional requirements should be reviewed and understood at

[http://www.arb.ca.gov/msprog/moyer/guidelines/2011gl/2011cmp\\_ch6\\_07\\_11\\_14.pdf](http://www.arb.ca.gov/msprog/moyer/guidelines/2011gl/2011cmp_ch6_07_11_14.pdf)

### **New Purchase**

Due to CARB's 2010 Diesel Engine Emission Standards (0.20 g/bhp-hr NO<sub>x</sub> and 0.01 g/bhp-hr PM) that took effect on January 1, 2010, on-road new purchase projects are limited exclusively to zero-emission technologies, which would generate minimal surplus emission reductions, resulting in very nominal funding amounts.

### **Repowers**

A replacement engine for a repower project must be a CARB-certified engine meeting emissions levels of 0.50 g/bhp-hr NO<sub>x</sub> and 0.01 g/bhp-hr PM or lower. Repowers with replacement family emission limit (FEL) engines that meet these emissions levels must be based on emission factors for model year 2007-2009 engines.

Due to technological constraints presented with the limited feasibility of newer engines with advanced emissions control equipment fitting into an older vehicle chassis, **single vehicle repower projects are not eligible for Moyer funding**. However, the economics of repower projects involving a large quantity of the same chassis and engine combination may allow compliance with the engine manufacturer quality assurance process that is equivalent to an Original Equipment Manufacturer (OEM) package. In these cases, a prototype vehicle is thoroughly reviewed and tested to ensure that the installation meets OEM requirements, and the successful prototype installation is then replicated in other vehicles with the same chassis and engine combination. While the prototype evaluation (with documented OEM approval) is not eligible for CMP funding, projects to replicate the identical chassis and engine combination will be considered on a case-by-case basis.

### **Retrofit/Replacement**

Please refer to the On-Road Voucher Incentive Program (VIP) to explore funding opportunities for replacement and retrofit funding at: [www.aqmd.gov/VIP](http://www.aqmd.gov/VIP).

### **OFF-ROAD COMPRESSION-IGNITION EQUIPMENT**

Propulsion engines greater than 25 horsepower on mobile off-road equipment are eligible for CMP funding, with limitations. Off-road heavy-duty equipment/engines include, but are not limited to, construction equipment, agricultural tractors, marine engines, shore power and locomotive equipment. Portable equipment is not eligible for CMP funding.

### **Construction**

Fleets must be in compliance with CARB's In-Use Off-Road Diesel Vehicle Regulation (Off-Road Regulation) in order to be eligible for funding. Applicants must submit information

regarding fleet size and compliance status. **This must include the Diesel Off-Road On-line Reporting System (DOORS) ID of the fleet, the DOORS Compliance Snapshot, the DOORS equipment list, and the DOORS Equipment Identification Number (EIN) of the funded equipment.** All documentation submitted must be signed and dated by the applicant and include language certifying that the fleet list provided is accurate and complete. Off-road projects fall into three distinct categories: 1) repower with an emission-certified engine, 2) retrofit with a verified-diesel emission control strategy (VDECS), and 3) replacement by a vehicle with an engine certified as meeting the current off-road emission standards.

#### Engine Repower

Engine repowers are commonly diesel-to-diesel repowers and significant NOx and PM benefits are achieved due to the higher emission levels of the engine being replaced. Funding is not available for projects where a spark-ignition engine (i.e., natural gas, gasoline, etc.) is replaced with a diesel engine. Off-road repower projects must install CARB-verified retrofit equipment subject to the “Retrofit Purchase” discussion below.

#### Retrofit Purchase

Retrofit is the installation of a CARB-verified diesel emission control device on an existing engine. Examples include, but are not limited to, particulate filters and diesel oxidation catalysts. Retrofit projects that control PM must use the highest level, technically feasible technology available for the equipment being retrofitted, which is defined as a device that achieves the highest level of PM reductions (Level 3 - 85 percent) and the highest level of NOx reductions.

#### Replacement

Fleets may apply for replacement in lieu of repowering their vehicle, where new or used replacement equipment with an engine certified to the current emission standard or Tier is purchased to replace the existing equipment (which will be scrapped).

#### Cargo Handling Equipment (CHE) Electrification

Cargo handling equipment fleets must be fully compliant with CARB’s Regulation for Cargo Handling Equipment at Ports and Intermodal Rail Yards in order to be eligible for CMP funding. Applicants must provide a copy of their most recent CARB Compliance Plan to document compliance with the regulation.

Existing diesel-powered rubber-tired gantry (RTG) cranes or diesel-powered CHE (i.e., yard trucks, etc.) operating at a seaport or intermodal railyard in a trade corridor are eligible for CMP funding to offset costs to electrify this equipment. Projects utilizing regulatory extensions are not eligible for funding.

#### CHE Electrification – RTG Cranes

The CMP allows funding to upgrade existing diesel-powered RTG cranes with a zero-emission power system. Eligible costs may include the purchase of a new crane or installation of a zero-emission engine, necessary parts for an existing RTG crane including directly related vehicle modifications, and infrastructure to supply electrical power, utility construction, and costs associated with increasing the capacity of electrical power to the crane. Ineligible costs include design, engineering, consulting, environmental review, legal fees, permits, licenses and associated fees, taxes, metered costs, insurance, operation, maintenance and repair. Projects are evaluated on a case-by-case basis.

### CHE Electrification – Other

The CMP allows partial funding of up to 50 percent of the eligible cost or \$50,000/unit, whichever is less, to replace an existing CHE with a zero-emission propulsion system. Eligible costs may include the purchase of a zero-emission yard truck. Ineligible costs include license, registration, taxes (other than federal excise and sales tax), insurance, operation, maintenance and repair. Projects are evaluated on a case-by-case basis.

### **MARINE VESSEL PROJECTS**

Marine vessel project types include engine repower and shore power. Each category is summarized below.

#### **Marine Engine Repower**

Limited CMP funding opportunities remain for vessel engines subject to the in-use compliance requirements of CARB's Commercial Harbor Craft (CHC) regulation, since the repower must be completed at least three (3) years prior to the vessel's regulatory in-use compliance date. Based on the vessel's operation, the newer engine's emissions must be surplus to the currently required U.S. EPA marine engine emission standard (i.e., Tier 3, Tier 4, etc.). Remanufacture kits, which are comprised of engine component parts that, when installed, reduce the engine's emissions, are subject to the same requirements as engine repower projects.

#### **Shore Power Projects**

Shore power projects are eligible only if applicants submit their CARB-approved Initial Terminal Plan with their application to document compliance with CARB's Shore Power regulation and that the proposed project provides emissions reductions that are surplus to regulatory requirements. Projects not subject to the Shore Power regulation are also eligible.

All subsequent project reports to air districts must include any new or updated Terminal Plans in order to evaluate compliance with the project contract.

For shore power projects that demonstrate eligibility, up to 50 percent of the total cost of a shore-side transformer and other equipment between the vessel and shore-side transformer at the port or terminal is eligible for CMP funding. Any costs directly related and necessary to the installation of the eligible equipment may reasonably be included in the total cost, such as labor for installation, and costs of site preparation. Design and engineering costs associated with the transformer and other eligible equipment between the vessel and transformer are considered professional labor costs required to complete the installation and are eligible for funding.

Up to 100 percent of necessary vessel (non-transformer) retrofit costs, specifically required to allow the vessel to plug into shore-side power, are eligible for CMP funding. Up to 50 percent of any necessary transformer costs on board the vessel are eligible for CMP funding.

Ineligible costs include modifications or enhancements made to the shore-side electrical infrastructure needed to bring power to the terminal. Other ineligible shore power costs consist of barge or other acquisitions and modification for a portable system, design, construction or metered costs, insurance, operation, maintenance and repair.

## LOCOMOTIVES

In the SCAQMD, all new locomotives and replacement engines must be certified to Tier 4 standards to be eligible for CMP funding.

Class 1 freight railroads may be eligible for Carl Moyer funding if Proposition 1B Goods Movement Program funding is not available. Such a project is subject to a case-by-case approval by CARB. Class 3 freight railroads and passenger railroads are not subject to any CARB fleet regulations and are therefore eligible for CMP funding. There are five types of locomotive projects that are eligible for Carl Moyer Program funding:

1. Alternative technology switcher (or other cleaner-than-required new locomotive)
2. Idle limiting device (ILD)
3. U.S. EPA-certified engine remanufacture kit or repower/refurbishment
4. CARB-verified retrofit
5. Head end power unit (HEP) (apply as an off-road engine project)

Locomotive project activity must be based upon fuel consumption.

All locomotive projects receiving more than \$50,000 per locomotive in Carl Moyer Program funds must include the purchase and installation of an ILD if the locomotive is not already equipped with such a device and installation is technically feasible.

Refer to the CMP guidelines for additional information regarding these project types:  
[http://www.arb.ca.gov/msprog/moyer/guidelines/2011gl/2011cmp\\_ch11\\_07\\_11\\_14.pdf](http://www.arb.ca.gov/msprog/moyer/guidelines/2011gl/2011cmp_ch11_07_11_14.pdf)

## DEFINITIONS

### Alternative Fuel

Alternative fuels include compressed natural gas (CNG), liquefied natural gas (LNG), hydrogen (H), methanol, ethanol, propane (LPG) and electric technologies. Experimental technologies and fuels will be referred to CARB for evaluation and possible eligibility in the program.

### Equipment Replacement

Equipment replacement means the replacement of an older vehicle or piece of equipment that still has remaining useful life with a newer, cleaner vehicle or piece of equipment. For this project type, applicant must have owned and operated the old equipment in California for the previous two years.

### Repower

Vehicle repower means the replacement of an in-use engine with another, cleaner engine (more than 15 percent cleaner).

### Retrofit

An emission control system employed exclusively with an in-use engine, vehicle or piece of equipment. **CARB guidance requires the applicant to select the highest level technology certified for that engine that provides the most emission reductions.** For many projects, this includes a diesel emission control device that reduces both PM and NOx emissions. In order to be eligible for CMP funding, the retrofit device must be verified for the specific engine family found on the equipment and achieve the highest level emission reductions when compared to other verified retrofit devices. If a specific device reduces both NOx and PM but the PM

reduction from a retrofit is required by a regulation, only the NOx reduction may be eligible for funding.

### SCAQMD Jurisdiction

The 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 area of 10,743 square miles is home to over 16.8 million people—about half the population of the whole state of California. It is the second most populated urban area in the United States and one of the smoggiest. Visit [www.aqmd.gov/home/about/jurisdiction](http://www.aqmd.gov/home/about/jurisdiction) for more information.

### **IMPORTANT PROGRAM INFORMATION**

- Applicants **must** provide vendor quotes with their application to document the cost of the low-emission vehicle/equipment project. Applicants may be awarded up to the designated percentage of total cost for the specified type of project (new purchase, repower and/or retrofit). Eligible costs include installation labor and sales tax; however, the total award may not exceed the maximum cost-effectiveness for the equipment/vehicle category. **All quotes must have been obtained within 90 days prior to the closing date of the Program Announcement.**
- A number of the CARB fleet rules and air quality regulations have reduced or eliminated CMP eligibility. Compliance with existing air quality regulations is a pre-requisite for CMP funding. Only emissions reductions in excess of regulatory requirements can be considered for CMP funding. If applicants are applying for CMP funds to reduce emissions before the required compliance date (i.e., early reductions), the equipment must demonstrate sufficient years of operation before the regulatory compliance deadline. Applicants are responsible for ensuring that they are in full compliance with all applicable regulations and that vehicles/equipment requests under the CMP provide surplus emissions reductions. As noted earlier, applicants must provide documentation of their regulatory compliance status.
- Any tax obligation associated with the award is the responsibility of the grantee.
- All projects must be operational within eighteen (18) months of contract execution or May 19, 2017, whichever is earlier, with the exception of large off-road fleet projects, in which case all equipment must be in operation no later than October 31, 2016.
- All project invoices must be submitted for payment no later than May 19, 2017, with the exception of large off-road fleet projects, in which case all invoices must be submitted for payment no later than October 31, 2016. Projects which have not invoiced by the applicable date may forfeit their funding.
- The highest level verified diesel emissions control system (VDECS) available is required.
- Repower projects must also include a VDECS, if available for the project engine. The cost of the VDECS equipment and installation may be included in the CMP grant request. It is the responsibility of the applicant to determine the applicability of this requirement, and, if required, to include quotes for this equipment in their application. Projects that require the additional VDECS that do not have cost and system specification information may not be evaluated by SCAQMD staff.

- No third party contracts will be executed.
- Pre- and post-inspection of all vehicles/engines/equipment approved for funding will be conducted, as required. Applicants must make all equipment available **locally (i.e. within the South Coast AQMD boundaries)** for inspections unless specified during contract preparation. Documentation of compliance with existing regulatory requirements is required at the time of pre-inspection.
- **Local** destruction of the engine and/or equipment being replaced is required for repower or replacement projects.
- Emissions reduction calculations will be based on annual hours of operation for off-road equipment projects, and annual mileage for on-road vehicle projects.
- For projects that involve extended idling, including but not limited to street sweepers and solid waste collection vehicles, annual fuel consumption may be used as the basis for the emissions reduction evaluation. For projects based on fuel consumption, usage must be based on two years of historical fuel consumption documentation submitted with the application and specific to the equipment for which funding is requested. Documentation may include fuel logs, purchase receipts, business logs, ledger entries, etc. Annual fuel consumption may be used for the emissions reduction evaluation if documentation of previous fuel usage and mileage records demonstrates at least 30% better cost-effectiveness, as compared to using hours (for off-road) or mileage (for on-road).

## **PROGRAM ADMINISTRATION**

The CMP will be administered locally by the SCAQMD through the Science and Technology Advancement office.

Funding category allocations are provided below in Table 1. The SCAQMD reserves the right to reallocate the funds to another category or subcategory. Additionally, the SCAQMD reserves the right to partially fund a project.

All qualified applications submitted for each category/subcategory will be evaluated for disproportional impacts (discussed in Section IV) and ranked by emission reduction cost-effectiveness.

Proposals for fuel and engine technologies not yet certified by CARB, or falling outside the categories specifically discussed in this PA, will be referred to CARB for determination of CMP eligibility. Please discuss these projects with SCAQMD staff prior to application submittal.



**Table 1: Proposed Funding and Cost-Effectiveness Limits**

<b>Category</b>	<b>Minimum Amount<sup>1</sup> (\$ millions)</b>	<b>Cost-Effectiveness \$/ton</b>
<b>ON-ROAD</b>		
(A) Vehicles <sup>2</sup> (including Emergency Vehicles)	3.0	17,720
<b>OFF-ROAD</b>		
(A) Marine/Shore Power	6.0	17,720
(B) Construction	5.0	17,720
(C) Locomotives	7.0	17,720
(D) Cargo Handling Equipment (electrification only)	2.0	17,720
	<b>23.0</b>	

<sup>1</sup> *In case of oversubscription in these categories, greater funding may be recommended.*

<sup>2</sup> *Due to the California Air Resources Board's 2010 New Diesel Engine Emission Standards (0.20 g/bhp-hr NOx and 0.01 g/bhp-hr PM) that took effect on January 1, 2010, on-road new purchase projects are limited exclusively to zero-emission technologies that still result in generating surplus emission reductions.*

#### **SCHEDULE OF EVENTS**

Issue PA #PA2015-07	March 6, 2015
Workshops	April – May 2015
All Applications Due by 1:00 pm	<b>Wednesday, June 3, 2015</b>
Awards Consideration by the Board	September – October 2015
Contract Execution	January 2016

**ALL PROPOSALS MUST BE RECEIVED AT THE SCAQMD HEADQUARTERS  
NO LATER THAN 1:00 P.M. ON WEDNESDAY, JUNE 3, 2015**

**Postmarks will not be accepted. Fax or e-mail proposals will not be accepted. Proposers may hand-deliver proposals to the SCAQMD by submitting the proposal to the SCAQMD reception desk. The proposal will be date and time-stamped and the person delivering the proposal will be given a receipt.**

### **SCHEDULE OF CMP GENERAL WORKSHOPS:**

- **Wednesday, April 15, 2015 - 10 a.m. to Noon**  
SCAQMD Headquarters, Room CC2  
21865 Copley Drive  
Diamond Bar, CA 91765
- **Wednesday, April 29, 2015 - 10 a.m. to Noon**  
SCAQMD Headquarters, Room CC2  
21865 Copley Drive  
Diamond Bar, CA 91765

### **MARINE VESSEL/SHORE POWER /CHE ELECTRIFICATION WORKSHOP**

- **Tuesday, May 5, 2015 – 10 a.m. to Noon**  
Port of Los Angeles Board Room  
425 South Palos Verdes Street  
San Pedro, CA 90731

### **STATEMENT OF COMPLIANCE**

Government Code Section 12990 and California Administrative Code, Title II, Division 4, Chapter 5, require employers to agree not to unlawfully discriminate against any employee or applicant because of race, religion, color, national origin, ancestry, physical handicap, medical condition, marital status, sex, or age. A statement of compliance with this clause is included in all SCAQMD contracts.

### **CONTACT FOR ADDITIONAL INFORMATION**

Questions regarding the content or intent of this PA, procedural matters, or locations of workshops should be addressed to:

Lani Montojo  
Science and Technology Advancement  
South Coast Air Quality Management District  
21865 Copley Drive, Diamond Bar, CA 91765  
(909) 396-2231/3252 FAX

### **SECTION II - WORK STATEMENT/SCHEDULE OF DELIVERABLES**

Applicants must sign the Application form indicating their understanding of the requirements for submittal of additional project information to finalize a contract and that all vehicles, engines or equipment must be in operation within eighteen (18) months of contract execution or by May 19, 2017, whichever is earlier<sup>1</sup>. **Unsigned applications will be deemed ineligible and may NOT be considered for funding.**

### **WORK STATEMENT**

The scope of work involves a series of tasks and deliverables that demonstrate compliance with the requirements of the CMP as administered by CARB and the SCAQMD. The project applicant is responsible for developing detailed project plans that address the program criteria. In addition, alternative fuel project applicants must discuss their plan for refueling the proposed vehicles/equipment, and if appropriate, should provide a letter of agreement from their fuel provider (see Application forms).

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<sup>1</sup> In the case of large off-road fleets, all equipment must be in operation no later than October 31, 2016.

At a minimum, any contract for funding the proposed project must meet the following criteria:

- Provide emission reductions that are real, quantifiable, enforceable and surplus in accordance with CARB and SCAQMD guidelines.
- Meet the cost-effectiveness limits, as described in Table 1 of this PA.
- Provide at least 30 percent NO<sub>x</sub> emission reduction for new engine/vehicle purchases and 15 percent for repowers and retrofits, compared to baseline NO<sub>x</sub> emissions, if NO<sub>x</sub> emission reductions are to be considered in the cost-effectiveness calculations.
- Commit that project engines or equipment operate in-service for the full project life, a minimum of three years, and at least 75 percent of annual operation must occur within the SCAQMD. Project life is the number of years used to determine the cost-effectiveness and is equal to the contract term.
- Commit that all vehicles/engines/equipment are in operation within 18 months of contract execution or by May 19, 2017 whichever is earlier<sup>2</sup>.
- Provide for appropriate record-keeping during the project life (i.e., annual mileage, fuel consumption and/or hours of operation).
- Ensure that the project complies with other local, state, and federal programs, and resulting emission reductions from a specific project are not required as a mitigation measure to reduce adverse environmental impacts that are identified in an environmental document prepared in accordance with the California Environmental Quality Act or the National Environmental Policy Act.
- If requested, contractor must provide a financial statement and bank reference, or other evidence of financial ability to fulfill contract requirements.
- If requested, contractor must make all equipment and records available to the SCAQMD or CARB for audit and inspections.

## **DELIVERABLES**

The contract will describe how the project will be monitored and what type of information will be included in project progress reports. At a minimum, the SCAQMD expects to receive the following reports:

1. Quarterly status reports until the vehicle or equipment purchase, repower or retrofit has been accomplished and in operation. These reports shall include a discussion of any problems encountered and how they were resolved, any changes in the schedule, and recommendations for completion of the project. These progress reports are required before payment for the purchase, repower or retrofit will be made.
2. An annual report for each year during the full contract term, or project life, which provides the annual miles or hours of operation, where the vehicle or equipment was operated (75 percent required in-Basin), annual fuel consumption, and operational and maintenance issues encountered and how they were resolved. SCAQMD reserves the right to verify the information provided.

Reporting forms are available online at: [www.aqmd.gov/Moyer](http://www.aqmd.gov/Moyer)

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<sup>2</sup> In the case of large off-road fleet projects, all equipment must be in operation no later than October 31, 2016.

### **SECTION III - PROPOSAL SUBMITTAL REQUIREMENTS**

Proposers **must** complete the appropriate application forms, which are included in Appendix A. In addition, Conflict of Interest and Project Cost information, as described below, must also be submitted with the application. It is the responsibility of the applicant to ensure that all information submitted is accurate and complete.

#### **CONFLICT OF INTEREST**

Applicant must address any potential conflicts of interest with other clients affected by actions performed by the firm on behalf of the SCAQMD. Although the proposer will not be automatically disqualified by reason of work performed for such firms, the SCAQMD reserves the right to consider the nature and extent of such work in evaluating the proposal. Conflicts of interest will be screened on a case-by-case basis by the SCAQMD General Counsel's Office. Conflict of interest provisions of the state law, including the Political Reform Act, may apply to work performed pursuant to this contract. Please discuss potential conflicts of interest on the Application Statement Form.

#### **PROJECT COST**

Applicants must provide cost information that specifies the amount of funding requested and the basis for that request by attaching vendor quotes to the application. Applicants need to inform vendors of the time frame of the award process so that they can estimate prices to the future/projected order/purchase date.

**Purchase orders must not be placed for projects until after the date of award approval by the SCAQMD Governing Board. Purchase orders may be placed after SCAQMD Governing Board approval and in advance of a fully executed contract, but these orders are placed at the applicant's risk<sup>3</sup>.**

The CMP funds only a percentage of the cost of the low-emission technology based on the type of project. The proposed low-emission technology must be CARB-certified in most cases<sup>4</sup>. No fueling infrastructure, administrative or operational costs will be funded.

All project costs must be clearly indicated in the application. In addition, applicants should be sure to include any sources of co-funding and the amount of each co-funding source in the application. **Proposers are cautioned that the project life period used in calculating emissions reductions will be used to determine the length of their annual reporting obligation.** In other words, a project applicant using a ten year life for the emissions reduction calculations will be required to operate, track and report activity for the project vehicle for the full ten years. The contract term will also be ten years.

Proposers are not required to calculate a project's cost-effectiveness, although it is helpful to understand your project's cost-effectiveness in order to anticipate the maximum possible grant award that might be recommended. Methodologies for calculating cost-effectiveness are provided in the CARB Moyer Guidelines at [http://www.arb.ca.gov/msprog/moyer/guidelines/2011gl/2011cmp\\_appc\\_07\\_11\\_14.pdf](http://www.arb.ca.gov/msprog/moyer/guidelines/2011gl/2011cmp_appc_07_11_14.pdf)

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<sup>3</sup> All orders placed in advance of a fully executed contract are at the purchaser's own risk.

<sup>4</sup> Note that an experimental permit from CARB may be considered, but the project will require special CARB approval.

## **APPLICATION SUBMISSION**

All applications must be submitted according to specifications set forth herein. Failure to adhere to these specifications may be cause for rejection of the proposal without evaluation.

**Staff Contact Information:** SCAQMD staff contacts for each program category are listed in Table 2 below. Applicants are strongly encouraged to contact SCAQMD staff experts to discuss their project prior to submitting an application to ensure program eligibility.

**Application Forms:** Program application forms are provided in Appendix A. These must be completed and submitted with other required documents (i.e. Business Information Request forms, activity documentation, project quotes, etc.) discussed in the application and below.

**Business Information Forms:** Consists of business information request forms that **must** be completed and submitted with the Application. Please note, if recommended for an award, you will be required to submit an updated Campaign Contribution Disclosure form at a later date.

**Due Date** - The proposer shall submit four (4) complete signed copies of the application, as well as an electronic copy of the application and its supporting documents on a CD or flash drive, in a sealed envelope, plainly marked in the upper left-hand corner with the name and address of the proposer and the words "**Program Announcement #PA2015-07**". All proposals/applications shall be submitted in an environmentally friendly format: stapled, not bound, black and white print; no three-ring, spiral or plastic binders, and no card stock or colored paper.

All proposals must be received no later than **1:00 p.m., on June 3, 2015**. Postmarks are not accepted as proof of deadline compliance. **Faxed or emailed proposals will not be accepted.** Proposals must be directed to:

Procurement Unit  
South Coast Air Quality Management District  
21865 East Copley Drive  
Diamond Bar, CA 91765

**Any correction or resubmission done by the proposer will not extend the submittal due date.**

**Grounds for Rejection** - A proposal may be immediately rejected if:

- It is not prepared in the format described
- It is not signed by an individual authorized to represent the firm
- Does not include current cost quotes, Contractor Statement Forms and other forms required in this PA.

**Missing Information** – Within five (5) business days of the proposal due date, SCAQMD will send letters to applicants regarding missing information. Applicants will have seven (7) days to provide any missing information requested in this letter. Any additional information requests will also have a seven (7) day response deadline.

**Disposition of Proposals** - The SCAQMD reserves the right to reject any or all proposals. All responses become the property of the SCAQMD. One copy of proposals not selected for funding shall be retained for one year. Additional copies and materials will be returned only if requested and at the proposer's expense.

## **SECTION IV - PROPOSAL EVALUATION/CONTRACTOR SELECTION CRITERIA**

SCAQMD staff will evaluate all submitted proposals and make recommendations to the Governing Board for final selection of project(s) to be funded. Proposals will be evaluated on the cost-effectiveness of NO<sub>x</sub>, PM<sub>10</sub> and ROG reduced, as well as a project's disproportional impact evaluation (discussed below). Be aware that there is a possibility that due to program priorities, cost-effectiveness and/or funding limitations, project applicants may be offered only partial funding, and not all proposals that meet cost-effectiveness criteria may be funded.

At least 50 percent of the SCAQMD's CMP funds must be spent in areas that are most disproportionately impacted by air pollution. SCAQMD uses the following method to meet these requirements:

1. All projects must qualify for the Carl Moyer Program by meeting the cost effectiveness limits established in the Program Announcement.
2. All projects will be evaluated according to the following criteria to qualify for funding as a disproportionately impacted area:
  - a) Poverty Level: Detailed socioeconomic information is not included in the 2010 Census. Such data is collected yearly from a small percentage of the population on a rotating basis by the American Community Survey (ACS). All projects in areas where at least 10 percent of the population falls below the Federal poverty level based on the 2008-2012 ACS data are eligible to be included in this category, and
  - b) PM<sub>2.5</sub> Exposure: All projects in areas with the highest 15 percent of PM<sub>2.5</sub> concentration measured within a 2 km grid will be eligible to be ranked in this category. The highest 15 percent of PM<sub>2.5</sub> concentration is 11.10 micrograms per cubic meter and above, on an annual average, or
  - c) Air Toxics Exposure: All projects in areas with a cancer risk of 865 in a million and above (based on MATES III estimates) will be eligible to be ranked in this category.

The maximum score is comprised of 40 percent for poverty level and 30 percent each for PM and toxic exposures. Special circumstances exist in some areas, such as the Ports of Long Beach and Los Angeles. Since there are no residents within the ports, poverty ranking could not be established. In this case, the poverty ranking from the adjacent on-shore areas was extended to the port since these populated areas are directly impacted by port activities.

## **SECTION V - PAYMENT TERMS**

For all projects, except shore power projects, full payment will be made upon installation and commencement of operation of the funded equipment. For shore power projects, a progress payment schedule will be established that allows payment upon completion of key milestones, as delineated in the contract.

## **SECTION VI: SCAQMD STAFF CONTACTS AND ADDITIONAL RESOURCES**

The SCAQMD staff contacts are listed in Table 2 by project category. Copies of the Program Announcement, Application Forms and a sample SCAQMD CMP contract may be accessed at: [www.aqmd.gov/Moyer](http://www.aqmd.gov/Moyer).

**Table 2: CMP Staff Contacts**

<b>Project Category</b>	<b>Staff Contact</b>	<b>Phone Number</b>	<b>E-mail</b>
On-Road Heavy-Duty Vehicles	Ashkaan Nikravan	(909) 396-3260	<a href="mailto:anikravan@aqmd.gov">anikravan@aqmd.gov</a>
Off-Road Equipment	Frank Motavassel	(909) 396-2152	<a href="mailto:fmotavassel@aqmd.gov">fmotavassel@aqmd.gov</a>
Cargo Handling Equipment Electrification	Greg Ushijima	(909) 396-3301	<a href="mailto:gushijima@aqmd.gov">gushijima@aqmd.gov</a>
Marine Vessels	Mark Coleman Von Loveland	(909) 396-3074 (909) 396-3063	<a href="mailto:mcoleman@aqmd.gov">mcoleman@aqmd.gov</a> <a href="mailto:vloveland@aqmd.gov">vloveland@aqmd.gov</a>
Shore Power	Greg Ushijima	(909) 396-3301	<a href="mailto:gushijima@aqmd.gov">gushijima@aqmd.gov</a>
Locomotives	Connie Day	(909) 396-3055	<a href="mailto:cday@aqmd.gov">cday@aqmd.gov</a>

### **WEBSITE LINKS TO CARB RULES THAT AFFECT CMP ELIGIBILITY**

On-Road Private (truck and bus) @ <http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm>

Public/Utility Fleets @ <http://www.arb.ca.gov/msprog/publicfleets/publicfleets.htm>

In-Use Off-Road (CI) @ <http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm>

Harbor Craft @ <http://www.arb.ca.gov/ports/marinevess/harborcraft.htm>

Cargo Handling Equipment @ <http://www.arb.ca.gov/ports/cargo/cargo.htm>

Shore Power @ <http://www.arb.ca.gov/ports/shorepower/shorepower.htm>

## APPENDIX A

### Table of Contents

**Each document listed below is linked to SCAQMD's CMP website for efficient download.**

1. Application Checklist
2. Form A-1: General Application (includes Checklist, Application Statement and Business Information Forms)
3. Category Application Form specific to your project category (one type per application)
  - a) Form B-1: On-Road Heavy-Duty Vehicles, New Purchase
  - b) Form B-2: On-Road Heavy-Duty Vehicles, Repower
  - c) Form B-3: Emergency Vehicles (Fire Apparatus)
  - d) Form C-1: Off-Road Equipment Replacement
  - e) Form C-2: Off-Road Equipment (Repower, Repower with Retrofit)
  - f) Form C-3: Off-Road Equipment Retrofit
  - g) Form C-4: Cargo Handling Equipment (CHE) Electrification
  - h) Form D-1: Marine Vessels, Repower
  - i) Form D-2: Marine Vessels, Shore Power
  - j) Form E-1: Locomotives



## APPLICATION CHECKLIST

Use this checklist to organize your application. Each of the following application sections is required to be submitted:

- A cover letter stating your grant request, how many pieces of equipment and/or engines included in the proposed project, and the funding amount being requested (per engine and for the total project).
- This Application Checklist (signed below)
- General Application Form A-1 – including:
  - General Application Information Form
  - Application Statement (signed and initialed as applicable)
  - Completed and **signed** Business Information Request Forms
- Category Application Form specific to your project category, along with the following attachments/enclosures:
  - Excel Worksheet associated with applicable application form/category (use this form with multiple equipment projects)
  - Vendor quotes dated no earlier than 90 days prior to the closing date of the Program Announcement
  - CARB Executive Orders for each engine. Download at:  
On-road: <http://www.arb.ca.gov/msprog/onroad/cert/cert.php>  
Off-road: <http://www.arb.ca.gov/diesel/cv.htm>
  - Previous two years of historical data documenting usage

Once completed please submit one electronic and four paper copies of the assembled package, in accordance with the Application Submittal Instructions.

I understand that all documents, as listed above, are required in order to have a complete application package in order to be considered for funding under the Carl Moyer Program.

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Signature

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Date



**FORM A-1: GENERAL APPLICATION FORM**

The SCAQMD is accepting applications for projects throughout its jurisdiction. All proposals will be evaluated based on their cost-effectiveness and their disproportionate impact score as discussed in Section IV “Proposal Evaluation/Contract Selection Criteria” contained in Program Announcement#PA2015-07. For additional information about SCAQMD’s policies and application information see: [www.aqmd.gov/Moyer](http://www.aqmd.gov/Moyer). In general, this program will follow the guidelines of the California Air Resources Board (CARB) Carl Moyer Memorial Air Quality Standards Attainment Program. For more information on this CARB program see: <http://www.arb.ca.gov/msprog/moyer/moyer.htm>.

The submittal of an application does not guarantee approval for funding, but will be used to determine the potential emission reductions and eligible grant funding amount for the proposed project. Any equipment purchased prior to project approval by the SCAQMD Governing Board will not be eligible for funding. Applicant may, at their own risk, issue a purchase order for approved equipment prior to contract execution. Other than a purchase order, **no other work shall proceed** until a fully executed contract, i.e. signed by the applicant and SCAQMD Board Chairman and a pre-inspection, is completed.

**APPLICANT INFORMATION**

Total Number of Vehicles/Equipment included in this application:	
Legal Name of Equipment Owner:	
Mailing Address:	
Street Address/P.O. Box:	
State:	
County:	
City and zip code:	

	E-Mail	Phone Number	Fax Number
Primary Contact Name:			
Person Authorized to Sign Application and Execute Grant Agreement:			

Name of Person who Completed Application:	
What is your position?	
How much are you being paid to complete this application for the owner or to assist in the proposed project?	
What is the source of funds being used to pay you?	
Signature:	
Date:	



**Application Statement – Please Read and Sign/Initial as Applicable**

All information provided in this application will be used by SCAQMD staff to evaluate the eligibility of this application to receive program funds. SCAQMD staff reserves the right to request additional information and can deny the application if such requested information is not provided by the requested deadline. Incomplete or illegible applications will be returned to applicant or vendor, without evaluation. An incomplete application is an application that is missing information critical to the evaluation of the project.

**Initial to indicate acceptance or note “NA” if not applicable (NA) to your project.**

I certify to the best of my knowledge that the information contained in this application is true and accurate.

I understand that all vehicles/equipment, both existing and new, must be made available within the SCAQMD boundaries for inspection, unless otherwise approved by SCAQMD’s Project Officer.

The vehicle/engine will be used within the SCAQMD boundaries (with the emission reduction system operating) for at least the projected usage shown in this application, and no less than 75 percent of the time.

I understand that it is my responsibility to ensure that all technologies are either verified or certified by the California Air Resources Board (CARB) to reduce NOx and/or PM pollutants. CARB Verification Letters and/or Executive Orders are attached, as applicable.

I understand that for repower projects, I am required to install the highest level available verified diesel emission control device (VDECS), and that the costs of this device and associated installation are a CMP eligible expense. These costs may be included in the project grant request up to the maximum cost-effectiveness limit.

I understand that there may be conditions placed upon receiving a grant and agree to refund the grant (or prorated portion thereof) if it is found that at any time I do not meet those conditions and if directed by the SCAQMD in accordance with the contract agreement.

I understand that, for this equipment, I will be prohibited from applying for any other form of emission reduction credits for Moyer-funded vehicles/engines, including: Emission Reduction Credit (ERC); Mobile Source Emission Reduction Credit (MSERC) and/or Certificate of Advanced Placement (CAP), for all time, from the SCAQMD, CARB or any other Air Quality Management or Air Pollution Control District.

The proposed project has not been funded and is not being considered for Carl Moyer Program funds by another air district, CARB, or any other public agency.

In the event that the vehicle(s)/equipment do not complete the minimum term of any agreement eventually reached from this application, I agree to ensure the equivalent project emissions reductions, or to return grant funds to the SCAQMD as required by the contract.

I have the legal authority to apply for grant funding for the entity described in this application.

I understand that all on-road engines in my fleet that are eligible for a low-NOx software upgrade (reflash) must be reflashed within 60 days of receipt of contract execution. I may self-certify that the reflash has been performed by submitting a receipt of the completed reflash or a picture of the “Low NOx Reflash Label” from the reflashed engine to SCAQMD.

Disclosure of the value of any current financial incentive that directly reduces the project price, including tax credits or deductions, grants, or other public financial assistance for the same engine is required. To avoid double counting of incentives, all tax credits or deductions, grants, or other public financial assistance must be deducted from the CMP request.

I understand that third party contracts are not permitted. A third party may, however complete an application on an owner’s behalf. Third parties are required to list how much compensation, if any, they are receiving to prepare the application(s), and to certify that no CMP funds are being used for this compensation.

I understand that off-road equipment applicants subject to CARB’s In-Use Off-Road Diesel Vehicle Regulation (Off-Road Regulation must submit information regarding fleet size and compliance status. This



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must include the Diesel Off-Road On-line Reporting System (DOORS) ID of the fleet and the DOORS Equipment Identification Number (EIN) of the funded equipment. All documentation submitted must be signed and dated by the applicant and include language certifying that the fleet list provided is accurate and complete.  
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I understand that additional project information may be requested during project review and must be submitted prior to contract award.  
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I understand that all vehicles, engines or equipment funded by this program must be operational within eighteen (18) months of contract execution, or by May 19, 2017, whichever is earlier, except in the case of large off-road fleet projects, where all equipment must be in operation no later than October 31, 2016.  
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All project applicants must submit documentation that supports the activity claimed in the application (i.e., fuel receipts, mileage logs and/or hour-meter readings covering the last two years). This documentation is attached.  
-----

The grant contract language cannot be modified without the written consent of all parties. I have reviewed and accepted the sample contract language.  
-----

I understand that an IRS Form 1099 may be issued to me for incentive funds received under the Moyer Program. I understand that it is my responsibility to determine the tax liability associated with participating in the Moyer Program.  
-----

I understand that an SCAQMD-funded Global Positioning System (GPS) unit will be installed on vehicles/equipment not operating within SCAQMD boundaries full time. I will submit data as requested and otherwise cooperate with all data reporting requirements. I also understand that the additional cost of the GPS unit will be added to the project cost when calculating cost-effectiveness, though the SCAQMD will pay for this system directly.  
-----

I understand that the SCAQMD has the right to conduct unannounced inspections for the full project life to ensure the project equipment is fully operational at the activity level committed to by the contract.  
-----

I understand that all emission reductions resulting from funded projects will be retired. To avoid double counting of emission reductions, project vehicles and/or equipment may not receive funding from any other government grant program that is designed to reduce mobile source emissions.  
-----

I understand that a tamper proof, non-resettable digital hour meter/odometer must be installed on all vehicles/equipment and that the digital hour meter/odometer will record the hours/miles accumulated within the SCAQMD boundaries. This cost is my responsibility.  
-----

I understand that any tax credits claimed must be deducted from the CMP request.

Please check one:

I do not plan to claim a tax credit or deduction for costs funded by the CMP.

I do plan to claim a tax credit or deduction for costs funded by the CMP.

If so, please indicate amount here: \$ \_\_\_\_\_

I plan to claim a tax credit or deduction only for the portion of incremental costs not funded by the CMP.

If so, please indicate amount here: \$ \_\_\_\_\_  
-----

**Conflict of Interest**

**I initialed below to indicate** that there are no potential conflicts of interest with other clients affected by actions performed by the firm on behalf of the SCAQMD. **If this bullet is not initialed, I have attached a description to this application of the potential conflict of interest**, which will be screened on a case-by-case basis by the SCAQMD District Counsel’s Office. There is no potential conflict of interest: \_\_\_\_\_ (Please initial if applicable, else attach separate sheet describing the potential conflict.)

\_\_\_\_\_  
Applicant’s Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Applicant’s Name (please print)

\_\_\_\_\_  
Title



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178

(909) 396-2000 • [www.aqmd.gov](http://www.aqmd.gov)

**Business Information Request Forms**  
**Complete and submit each form with application.**  
**Please do not submit the instructions.**

Dear SCAQMD Contractor/Supplier:

The South Coast Air Quality Management District (SCAQMD) is committed to ensuring that our contractor/supplier records are current and accurate. If your firm is selected for award of a purchase order or contract, it is imperative that the information requested herein be supplied in a timely manner to facilitate payment of invoices. In order to process your payments, we need the enclosed information regarding your account. **Please review and complete the information identified on the following pages, complete the enclosed W-9 form, remember to sign both documents for our files, and return them as soon as possible to the address below:**

**Attention: Accounts Payable, Accounting Department**  
**South Coast Air Quality Management District**  
**21865 Copley Drive**  
**Diamond Bar, CA 91765-4178**

If you do not return this information, we will not be able to establish you as a vendor. This will delay any payments and would still necessitate your submittal of the enclosed information to our Accounting department before payment could be initiated. Completion of this document and enclosed forms would ensure that your payments are processed timely and accurately.

**If you have any questions or need assistance in completing this information, please contact Accounting at (909) 396-3777. We appreciate your cooperation in completing this necessary information.**

Sincerely,

Michael B. O'Kelly  
Chief Financial Officer

DH:tm

Enclosures: Business Information Request  
Disadvantaged Business Certification  
W-9  
Form 590 Withholding Exemption Certificate  
Federal Contract Debarment Certification  
Campaign Contributions Disclosure  
Direct Deposit Authorization

REV 12/14



# South Coast Air Quality Management District

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

## BUSINESS INFORMATION REQUEST

Business Name	
Division of	
Subsidiary of	
Website Address	
Type of Business <i>Check One:</i>	<input type="checkbox"/> Individual <input type="checkbox"/> DBA, Name _____, County Filed in _____ <input type="checkbox"/> Corporation, ID No. _____ <input type="checkbox"/> LLC/LLP, ID No. _____ <input type="checkbox"/> Other _____

## REMITTING ADDRESS INFORMATION

Address			
City/Town			
State/Province		Zip	
Phone	(    )    -    Ext	Fax	(    )    -
Contact		Title	
E-mail Address			
Payment Name if Different			

**All invoices must reference the corresponding Purchase Order Number(s)/Contract Number(s) if applicable and mailed to:**

**Attention: Accounts Payable, Accounting Department  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765-4178**

## DISADVANTAGED BUSINESS CERTIFICATION

Federal guidance for utilization of disadvantaged business enterprises allows a vendor to be deemed a small business enterprise (SBE), minority business enterprise (MBE) or women business enterprise (WBE) if it meets the criteria below.

- is certified by the Small Business Administration or
- is certified by a state or federal agency or
- is an independent MBE(s) or WBE(s) business concern which is at least 51 percent owned and controlled by minority group member(s) who are citizens of the United States.

Statements of certification:

As a prime contractor to the SCAQMD, \_\_\_\_\_ (name of business) will engage in good faith efforts to achieve the fair share in accordance with 40 CFR Section 33.301, and will follow the six affirmative steps listed below **for contracts or purchase orders funded in whole or in part by federal grants and contracts.**

1. Place qualified SBEs, MBEs, and WBEs on solicitation lists.
2. Assure that SBEs, MBEs, and WBEs are solicited whenever possible.
3. When economically feasible, divide total requirements into small tasks or quantities to permit greater participation by SBEs, MBEs, and WBEs.
4. Establish delivery schedules, if possible, to encourage participation by SBEs, MBEs, and WBEs.
5. Use services of Small Business Administration, Minority Business Development Agency of the Department of Commerce, and/or any agency authorized as a clearinghouse for SBEs, MBEs, and WBEs.
6. If subcontracts are to be let, take the above affirmative steps.

**Self-Certification Verification: Also for use in awarding additional points, as applicable, in accordance with SCAQMD Procurement Policy and Procedure:**

Check all that apply:

- Small Business Enterprise/Small Business Joint Venture  Women-owned Business Enterprise  
 Local business  Disabled Veteran-owned Business Enterprise/DVBE Joint Venture  
 Minority-owned Business Enterprise

Percent of ownership: \_\_\_\_\_ %

Name of Qualifying Owner(s): \_\_\_\_\_

**State of California Public Works Contractor Registration No. \_\_\_\_\_ . MUST BE INCLUDED IF BID PROPOSAL IS FOR PUBLIC WORKS PROJECT.**

I, the undersigned, hereby declare that to the best of my knowledge the above information is accurate. Upon penalty of perjury, I certify information submitted is factual.

\_\_\_\_\_  
NAME

\_\_\_\_\_  
TITLE

\_\_\_\_\_  
TELEPHONE NUMBER

\_\_\_\_\_  
DATE

## Definitions

**Disabled Veteran-Owned Business Enterprise** means a business that meets all of the following criteria:

- is a sole proprietorship or partnership of which is at least 51 percent owned by one or more disabled veterans, or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more disabled veterans; a subsidiary which is wholly owned by a parent corporation but only if at least 51 percent of the voting stock of the parent corporation is owned by one or more disabled veterans; or a joint venture in which at least 51 percent of the joint venture's management and control and earnings are held by one or more disabled veterans.
- the management and control of the daily business operations are by one or more disabled veterans. The disabled veterans who exercise management and control are not required to be the same disabled veterans as the owners of the business.
- is a sole proprietorship, corporation, partnership, or joint venture with its primary headquarters office located in the United States and which is not a branch or subsidiary of a foreign corporation, firm, or other foreign-based business.

**Joint Venture** means that one party to the joint venture is a DVBE and owns at least 51 percent of the joint venture. In the case of a joint venture formed for a single project this means that DVBE will receive at least 51 percent of the project dollars.

**Local Business** means a business that meets all of the following criteria:

- has an ongoing business within the boundary of the SCAQMD at the time of bid application.
- performs 90 percent of the work within SCAQMD's jurisdiction.

**Minority-Owned Business Enterprise** means a business that meets all of the following criteria:

- is at least 51 percent owned by one or more minority persons or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more minority persons.
- is a business whose management and daily business operations are controlled or owned by one or more minority person.
- is a business which is a sole proprietorship, corporation, partnership, joint venture, an association, or a cooperative with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign business.

“Minority” person means a Black American, Hispanic American, Native American (including American Indian, Eskimo, Aleut, and Native Hawaiian), Asian-Indian American (including a person whose origins are from India, Pakistan, or Bangladesh), Asian-Pacific American (including a person whose origins are from Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the United States Trust Territories of the Pacific, Northern Marianas, Laos, Cambodia, or Taiwan).

Small Business Enterprise means a business that meets the following criteria:

- a. 1) an independently owned and operated business; 2) not dominant in its field of operation; 3) together with affiliates is either:
  - A service, construction, or non-manufacturer with 100 or fewer employees, and average annual gross receipts of ten million dollars (\$10,000,000) or less over the previous three years, or
  - A manufacturer with 100 or fewer employees.
- b. Manufacturer means a business that is both of the following:
  - 1) Primarily engaged in the chemical or mechanical transformation of raw materials or processed substances into new products.
  - 2) Classified between Codes 311000 to 339000, inclusive, of the North American Industrial Classification System (NAICS) Manual published by the United States Office of Management and Budget, 2007 edition.



**Small Business Joint Venture** means that one party to the joint venture is a Small Business and owns at least 51 percent of the joint venture. In the case of a joint venture formed for a single project this means that the Small Business will receive at least 51 percent of the project dollars.

**Women-Owned Business Enterprise** means a business that meets all of the following criteria:

- is at least 51 percent owned by one or more women or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more women.
- is a business whose management and daily business operations are controlled or owned by one or more women.
- is a business which is a sole proprietorship, corporation, partnership, or a joint venture, with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign business.

## Request for Taxpayer Identification Number and Certification

**Give Form to the  
requester. Do not  
send to the IRS.**

<b>Print or type See Specific Instructions on page 2.</b>	Name (as shown on your income tax return)	
	Business name/disregarded entity name, if different from above	
	Check appropriate box for federal tax classification: <input type="checkbox"/> Individual/sole proprietor <input type="checkbox"/> C Corporation <input type="checkbox"/> S Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Trust/estate  <input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ _____  <input type="checkbox"/> Other (see instructions) ▶ _____	Exemptions (see instructions):  Exempt payee code (if any) _____ Exemption from FATCA reporting code (if any) _____
	Address (number, street, and apt. or suite no.)	Requester's name and address (optional)
	City, state, and ZIP code	
	List account number(s) here (optional)	

<b>Part I Taxpayer Identification Number (TIN)</b>																							
Enter your TIN in the appropriate box. The TIN provided must match the name given on the "Name" line to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see <i>How to get a TIN</i> on page 3.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="11" style="text-align: center;"><b>Social security number</b></td> </tr> <tr> <td style="width: 30px; height: 20px;"> </td> <td style="width: 30px; height: 20px;"> </td> <td style="width: 30px; height: 20px;"> </td> <td style="width: 30px; height: 20px;"> </td> <td style="width: 30px; height: 20px;"> </td> <td style="width: 30px; height: 20px;"> </td> <td style="width: 30px; height: 20px;"> </td> <td style="width: 30px; height: 20px;"> </td> <td style="width: 30px; height: 20px;"> </td> <td style="width: 30px; height: 20px;"> </td> <td style="width: 30px; height: 20px;"> </td> </tr> </table>	<b>Social security number</b>																					
<b>Social security number</b>																							
<b>Note.</b> If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="11" style="text-align: center;"><b>Employer identification number</b></td> </tr> <tr> <td style="width: 30px; height: 20px;"> </td> <td style="width: 30px; height: 20px;"> </td> <td style="width: 30px; height: 20px;"> </td> <td style="width: 30px; height: 20px;"> </td> <td style="width: 30px; height: 20px;"> </td> <td style="width: 30px; height: 20px;"> </td> <td style="width: 30px; height: 20px;"> </td> <td style="width: 30px; height: 20px;"> </td> <td style="width: 30px; height: 20px;"> </td> <td style="width: 30px; height: 20px;"> </td> <td style="width: 30px; height: 20px;"> </td> </tr> </table>	<b>Employer identification number</b>																					
<b>Employer identification number</b>																							

<b>Part II Certification</b>	
Under penalties of perjury, I certify that:	
1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and 2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and 3. I am a U.S. citizen or other U.S. person (defined below), and 4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.	
<b>Certification instructions.</b> You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.	
<b>Sign Here</b>	Signature of U.S. person ▶ _____  Date ▶ _____

### General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

**Future developments.** The IRS has created a page on [www.irs.gov/w9](http://www.irs.gov/w9) for information about Form W-9, at [www.irs.gov/w9](http://www.irs.gov/w9). Information about any future developments affecting Form W-9 (such as legislation enacted after we release it) will be posted on that page.

**Purpose of Form**

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, payments made to you in settlement of payment card and third party network transactions, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

- Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
- Certify that you are not subject to backup withholding, or
- Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and

4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct.

**Note.** If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

**Definition of a U.S. person.** For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States,
- An estate (other than a foreign estate), or
- A domestic trust (as defined in Regulations section 301.7701-7).

**Special rules for partnerships.** Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States:

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity,
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust, and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

**Foreign person.** If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

**Nonresident alien who becomes a resident alien.** Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

**Example.** Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

**What is backup withholding?** Persons making certain payments to you must under certain conditions withhold and pay to the IRS a percentage of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

### Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the Part II instructions on page 3 for details),
3. The IRS tells the requester that you furnished an incorrect TIN,
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or
5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code* on page 3 and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships* on page 1.

**What is FATCA reporting?** The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code* on page 3 and the Instructions for the Requester of Form W-9 for more information.

## Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account, for example, if the grantor of a grantor trust dies.

## Penalties

**Failure to furnish TIN.** If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

**Civil penalty for false information with respect to withholding.** If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

**Criminal penalty for falsifying information.** Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

**Misuse of TINs.** If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

## Specific Instructions

### Name

If you are an individual, you must generally enter the name shown on your income tax return. However, if you have changed your last name, for instance, due to marriage without informing the Social Security Administration of the name change, enter your first name, the last name shown on your social security card, and your new last name.

If the account is in joint names, list first, and then circle, the name of the person or entity whose number you entered in Part I of the form.

**Sole proprietor.** Enter your individual name as shown on your income tax return on the "Name" line. You may enter your business, trade, or "doing business as (DBA)" name on the "Business name/disregarded entity name" line.

**Partnership, C Corporation, or S Corporation.** Enter the entity's name on the "Name" line and any business, trade, or "doing business as (DBA) name" on the "Business name/disregarded entity name" line.

**Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulation section 301.7701-2(c)(2)(iii). Enter the owner's name on the "Name" line. The name of the entity entered on the "Name" line should never be a disregarded entity. The name on the "Name" line must be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on the "Name" line. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on the "Business name/disregarded entity name" line. If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

**Note.** Check the appropriate box for the U.S. federal tax classification of the person whose name is entered on the "Name" line (Individual/sole proprietor, Partnership, C Corporation, S Corporation, Trust/estate).

**Limited Liability Company (LLC).** If the person identified on the "Name" line is an LLC, check the "Limited liability company" box only and enter the appropriate code for the U.S. federal tax classification in the space provided. If you are an LLC that is treated as a partnership for U.S. federal tax purposes, enter "P" for partnership. If you are an LLC that has filed a Form 8832 or a Form 2553 to be taxed as a corporation, enter "C" for C corporation or "S" for S corporation, as appropriate. If you are an LLC that is disregarded as an entity separate from its owner under Regulation section 301.7701-3 (except for employment and excise tax), do not check the LLC box unless the owner of the LLC (required to be identified on the "Name" line) is another LLC that is not disregarded for U.S. federal tax purposes. If the LLC is disregarded as an entity separate from its owner, enter the appropriate tax classification of the owner identified on the "Name" line.

**Other entities.** Enter your business name as shown on required U.S. federal tax documents on the "Name" line. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on the "Business name/disregarded entity name" line.

## Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the *Exemptions* box, any code(s) that may apply to you. See *Exempt payee code* and *Exemption from FATCA reporting code* on page 3.



**Exempt payee code.** Generally, individuals (including sole proprietors) are not exempt from backup withholding. Corporations are exempt from backup withholding for certain payments, such as interest and dividends. Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.

**Note.** If you are exempt from backup withholding, you should still complete this form to avoid possible erroneous backup withholding.

The following codes identify payees that are exempt from backup withholding:

- 1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)
- 2—The United States or any of its agencies or instrumentalities
- 3—A state, the District of Columbia, a possession of the United States, or any of their political subdivisions or instrumentalities
- 4—A foreign government or any of its political subdivisions, agencies, or instrumentalities
- 5—A corporation
- 6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a possession of the United States
- 7—A futures commission merchant registered with the Commodity Futures Trading Commission
- 8—A real estate investment trust
- 9—An entity registered at all times during the tax year under the Investment Company Act of 1940
- 10—A common trust fund operated by a bank under section 584(a)
- 11—A financial institution
- 12—A middleman known in the investment community as a nominee or custodian
- 13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over \$600 required to be reported and direct sales over \$5,000 <sup>1</sup>	Generally, exempt payees 1 through 5 <sup>2</sup>
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

<sup>1</sup> See Form 1099-MISC, Miscellaneous Income, and its instructions.  
<sup>2</sup> However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney, and payments for services paid by a federal executive agency.

**Exemption from FATCA reporting code.** The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements.

- A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)
- B—The United States or any of its agencies or instrumentalities
- C—A state, the District of Columbia, a possession of the United States, or any of their political subdivisions or instrumentalities
- D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Reg. section 1.1472-1(c)(1)(i)
- E—A corporation that is a member of the same expanded affiliated group as a corporation described in Reg. section 1.1472-1(c)(1)(i)
- F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

- G—A real estate investment trust
- H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940
- I—A common trust fund as defined in section 584(a)
- J—A bank as defined in section 581
- K—A broker
- L—A trust exempt from tax under section 664 or described in section 4947(a)(1)
- M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

**Part I. Taxpayer Identification Number (TIN)**

**Enter your TIN in the appropriate box.** If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-member LLC that is disregarded as an entity separate from its owner (see *Limited Liability Company (LLC)* on page 2), enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

**Note.** See the chart on page 4 for further clarification of name and TIN combinations.

**How to get a TIN.** If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local Social Security Administration office or get this form online at [www.ssa.gov](http://www.ssa.gov). You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at [www.irs.gov/businesses](http://www.irs.gov/businesses) and clicking on Employer Identification Number (EIN) under Starting a Business. You can get Forms W-7 and SS-4 from the IRS by visiting [IRS.gov](http://IRS.gov) or by calling 1-800-TAX-FORM (1-800-829-3676).

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

**Note.** Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

**Caution:** A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

**Part II. Certification**

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if items 1, 4, or 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on the "Name" line must sign. Exempt payees, see *Exempt payee code* earlier.

**Signature requirements.** Complete the certification as indicated in items 1 through 5 below.

- 1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983.** You must give your correct TIN, but you do not have to sign the certification.
- 2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983.** You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.
- 3. Real estate transactions.** You must sign the certification. You may cross out item 2 of the certification.
- 4. Other payments.** You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).
- 5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions.** You must give your correct TIN, but you do not have to sign the certification.

**What Name and Number To Give the Requester**

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account)	The actual owner of the account or, if combined funds, the first individual on the account <sup>1</sup>
3. Custodian account of a minor (Uniform Gift to Minors Act)	The minor <sup>2</sup>
4. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee <sup>1</sup>
b. So-called trust account that is not a legal or valid trust under state law	The actual owner <sup>1</sup>
5. Sole proprietorship or disregarded entity owned by an individual	The owner <sup>3</sup>
6. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulation section 1.671-4(b)(2)(i)(A))	The grantor <sup>*</sup>
For this type of account:	Give name and EIN of:
7. Disregarded entity not owned by an individual	The owner
8. A valid trust, estate, or pension trust	Legal entity <sup>4</sup>
9. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
10. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
11. Partnership or multi-member LLC	The partnership
12. A broker or registered nominee	The broker or nominee
13. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
14. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulation section 1.671-4(b)(2)(i)(B))	The trust

<sup>1</sup> List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

<sup>2</sup> Circle the minor's name and furnish the minor's SSN.

<sup>3</sup> You must show your individual name and you may also enter your business or "DBA" name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

<sup>4</sup> List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships* on page 1.

**\*Note.** Grantor also must provide a Form W-9 to trustee of trust.

**Note.** If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

**Secure Your Tax Records from Identity Theft**

Identity theft occurs when someone uses your personal information such as your name, social security number (SSN), or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Publication 4535, Identity Theft Prevention and Victim Assistance.

Victims of identity theft who are experiencing economic harm or a system problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

**Protect yourself from suspicious emails or phishing schemes.** Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to [phishing@irs.gov](mailto:phishing@irs.gov). You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at: [spam@uce.gov](mailto:spam@uce.gov) or contact them at [www.ftc.gov/idtheft](http://www.ftc.gov/idtheft) or 1-877-IDTHEFT (1-877-438-4338).

Visit [IRS.gov](http://IRS.gov) to learn more about identity theft and how to reduce your risk.

**Privacy Act Notice**

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.



# 2014 Withholding Exemption Certificate

**590**

The payee completes this form and submits it to the withholding agent.

Withholding Agent (Type or print)

Name

**Payee**

Name

SSN or ITIN  FEIN  CA Corp no.  CA SOS file no.

Address (apt./ste., room, PO Box, or PMB no.)

City (If you have a foreign address, see instructions.)

State

ZIP Code

**Exemption Reason**

Check only one reason box below that applies to the payee.

By checking the appropriate box below, the Payee certifies the reason for the exemption from the California income tax withholding requirements on payment(s) made to the entity or individual.

- Individuals — Certification of Residency:**  
I am a resident of California and I reside at the address shown above. If I become a nonresident at any time, I will promptly notify the withholding agent. See instructions for General Information D, Definitions.
- Corporations:**  
The corporation has a permanent place of business in California at the address shown above or is qualified through the California Secretary of State (SOS) to do business in California. The corporation will file a California tax return. If this corporation ceases to have a permanent place of business in California or ceases to do any of the above, I will promptly notify the withholding agent. See instructions for General Information D, Definitions.
- Partnerships or limited liability companies (LLCs):**  
The partnership or LLC has a permanent place of business in California at the address shown above or is registered with the California SOS, and is subject to the laws of California. The partnership or LLC will file a California tax return. If the partnership or LLC ceases to do any of the above, I will promptly inform the withholding agent. For withholding purposes, a limited liability partnership (LLP) is treated like any other partnership.
- Tax-Exempt Entities:**  
The entity is exempt from tax under California Revenue and Taxation Code (R&TC) Section 23701 \_\_\_\_\_ (insert letter) or Internal Revenue Code Section 501(c) \_\_\_\_\_ (insert number). If this entity ceases to be exempt from tax, I will promptly notify the withholding agent. Individuals cannot be tax-exempt entities.
- Insurance Companies, Individual Retirement Arrangements (IRAs), or Qualified Pension/Profit Sharing Plans:**  
The entity is an insurance company, IRA, or a federally qualified pension or profit-sharing plan.
- California Trusts:**  
At least one trustee and one noncontingent beneficiary of the above-named trust is a California resident. The trust will file a California fiduciary tax return. If the trustee or noncontingent beneficiary becomes a nonresident at any time, I will promptly notify the withholding agent.
- Estates — Certification of Residency of Deceased Person:**  
I am the executor of the above-named person's estate or trust. The decedent was a California resident at the time of death. The estate will file a California fiduciary tax return.
- Nonmilitary Spouse of a Military Servicemember:**  
I am a nonmilitary spouse of a military servicemember and I meet the Military Spouse Residency Relief Act (MSRRA) requirements. See instructions for General Information E, MSRRA.

**CERTIFICATE OF PAYEE:** Payee must complete and sign below.

Under penalties of perjury, I hereby certify that the information provided in this document is, to the best of my knowledge, true and correct. If conditions change, I will promptly notify the withholding agent.

Payee's name and title (type or print) \_\_\_\_\_ Telephone (\_\_\_\_) \_\_\_\_\_

Payee's signature ► \_\_\_\_\_ Date \_\_\_\_\_

# Instructions for Form 590

## Withholding Exemption Certificate

References in these instructions are to the California Revenue and Taxation Code (R&TC).

### General Information

**Registered Domestic Partners (RDP)** – For purposes of California income tax, references to a spouse, husband, or wife also refer to a Registered Domestic Partner (RDP) unless otherwise specified. For more information on RDPs, get FTB Pub. 737, Tax Information for Registered Domestic Partners.

### A Purpose

Use Form 590, Withholding Exemption Certificate, to certify an exemption from nonresident withholding.

Form 590 does not apply to payments of backup withholding. For information on California backup withholding, go to [ftb.ca.gov](http://ftb.ca.gov) and search for **backup withholding**.

Form 590 does not apply to payments for wages to employees. Wage withholding is administered by the California Employment Development Department (EDD). For more information, go to [edd.ca.gov](http://edd.ca.gov) or call 888.745.3886.

Do not use Form 590 to certify an exemption from withholding if you are a **Seller of California real estate**. Sellers of California real estate use Form 593-C, Real Estate Withholding Certificate, to claim an exemption from real estate withholding.

**The following are excluded from withholding and completing this form:**

- The United States and any of its agencies or instrumentalities.
- A state, a possession of the United States, the District of Columbia, or any of its political subdivisions or instrumentalities.
- A foreign government or any of its political subdivisions, agencies, or instrumentalities.

### B Income Subject to Withholding

California Revenue and Taxation Code (R&TC) Section 18662 requires withholding of income or franchise tax on payments of California source income made to nonresidents of California.

Withholding is required on the following, but is not limited to:

- Payments to nonresidents for services rendered in California.
- Distributions of California source income made to domestic nonresident S corporation shareholders, partners, and members and allocations of California source income made to foreign partners and members.
- Payments to nonresidents for rents if the payments are made in the course of the withholding agent's business.

- Payments to nonresidents for royalties from natural resources with activities in California.
- Distributions of California source income to nonresident beneficiaries from an estate or trust.
- Endorsement payments received for services performed in California.
- Prizes and winnings received by nonresidents for contests in California.

However, withholding is optional if the total payments of California source income are \$1,500 or less during the calendar year.

For more information on withholding get FTB Pub. 1017, Resident and Nonresident Withholding Guidelines. To get a withholding publication, see Additional Information.

### C Who Certifies this Form

Form 590 is certified by the payee. California residents or entities exempt from the withholding requirement should complete Form 590 and submit it to the withholding agent. The withholding agent is then relieved of the withholding requirements if the agent relies in good faith on a completed and signed Form 590 unless notified by the Franchise Tax Board (FTB) that the form should not be relied upon.

An incomplete certificate is invalid and the withholding agent should not accept it. If the withholding agent receives an incomplete certificate, the withholding agent is required to withhold tax on payments made to the payee until a valid certificate is received. In lieu of a completed certificate on the preprinted form, the withholding agent may accept as a substitute certificate a letter from the payee explaining why the payee is not subject to withholding. The letter must contain all the information required on the certificate in similar language, including the under penalty of perjury statement and the payee's taxpayer identification number. The withholding agent must retain a copy of the certificate or substitute for at least four years after the last payment to which the certificate applies, and provide it upon request to the FTB.

For example, if an entertainer (or the entertainer's business entity) is paid for a performance, the entertainer's information must be provided. **Do not** submit the entertainer's agent or promoter information.

The grantor of a grantor trust shall be treated as the payee for withholding purposes. Therefore, if the payee is a grantor trust and one or more of the grantors is a nonresident, withholding is required. If all of the grantors on the trust are residents, no withholding is required. Resident grantors can check the box on Form 590 labeled "Individuals — Certification of Residency."

### D Definitions

**Nonresident** includes all of the following:

- Individuals who are not residents of California.
- Corporations not qualified through the California Secretary of State (CA SOS) to do business in California or having no permanent place of business in California.
- Partnerships or limited liability companies (LLCs) with no permanent place of business in California.
- Any trust without a resident grantor, beneficiary, or trustee, or estates where the decedent was not a California resident.

Foreign refers to non-U.S.

For more information about determining resident status, get FTB Pub. 1031, Guidelines for Determining Resident Status. Military servicemembers have special rules for residency. For more information, get FTB Pub. 1032, Tax Information for Military Personnel.

### Permanent Place of Business:

A corporation has a permanent place of business in California if it is organized and existing under the laws of California or if it is a foreign corporation qualified to transact intrastate business by the CA SOS. A corporation that has not qualified to transact intrastate business (e.g., a corporation engaged exclusively in interstate commerce) will be considered as having a permanent place of business in California only if it maintains a permanent office in California that is permanently staffed by its employees.

### E Military Spouse Residency Relief Act (MSRRA)

Generally, for tax purposes you are considered to maintain your existing residence or domicile. If a military servicemember and nonmilitary spouse have the same state of domicile, the MSRRA provides:

- A spouse shall not be deemed to have lost a residence or domicile in any state solely by reason of being absent to be with the servicemember serving in compliance with military orders.
- A spouse shall not be deemed to have acquired a residence or domicile in any other state solely by reason of being there to be with the servicemember serving in compliance with military orders.

**Domicile** is defined as the one place:

- Where you maintain a true, fixed, and permanent home.
- To which you intend to return whenever you are absent.

A military servicemember's nonmilitary spouse is considered a nonresident for tax purposes if the servicemember and spouse have the same domicile outside of California and the spouse is in California solely to be with the servicemember who is serving in compliance with Permanent Change of Station orders.

California may require nonmilitary spouses of military servicemembers to provide proof that they meet the criteria for California personal income tax exemption as set forth in the MSRRA.

Income of a military servicemember's nonmilitary spouse for services performed in California is not California source income subject to state tax if the spouse is in California to be with the servicemember serving in compliance with military orders, and the servicemember and spouse have the same domicile in a state other than California.

For additional information or assistance in determining whether the applicant meets the MSRRA requirements, get FTB Pub. 1032.

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## Specific Instructions

### Payee Instructions

Enter the withholding agent's name.

Enter the payee's information, including the taxpayer identification number (TIN) and check the appropriate TIN box.

You must provide an acceptable TIN as requested on this form. The following are acceptable TINs: social security number (SSN); individual taxpayer identification number (ITIN); federal employer identification number (FEIN); California corporation number (CA Corp no.); or CA SOS file number.

**Private Mail Box (PMB)** – Include the PMB in the address field. Write "PMB" first, then the box number. Example: 111 Main Street PMB 123.

**Foreign Address** – Enter the information in the following order: City, Country, Province/Region, and Postal Code. Follow the country's practice for entering the postal code. **Do not** abbreviate the country's name.

Check the box that reflects the reason why the payee is exempt from the California income tax withholding requirement.

### Withholding Agent Instructions

Keep Form 590 for your records. **Do not** send this form to the FTB unless it has been specifically requested.

For more information, contact Withholding Services and Compliance, see Additional Information.

The payee must notify the withholding agent if any of the following situations occur:

- The individual payee becomes a nonresident.
- The corporation ceases to have a permanent place of business in California or ceases to be qualified to do business in California.
- The partnership ceases to have a permanent place of business in California.
- The LLC ceases to have a permanent place of business in California.
- The tax-exempt entity loses its tax-exempt status.

If any of these situations occur, then withholding may be required. For more information, get Form 592, Resident and Nonresident Withholding Statement, Form 592-B, Resident and Nonresident Withholding Tax Statement, and Form 592-V, Payment Voucher for Resident and Nonresident Withholding.

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## Additional Information

For additional information or to speak to a representative regarding this form, call the Withholding Services and Compliance telephone service at:

Telephone: 888.792.4900  
916.845.4900

Fax: 916.845.9512

OR write to:

WITHHOLDING SERVICES AND  
COMPLIANCE MS F182  
FRANCHISE TAX BOARD  
PO BOX 942867  
SACRAMENTO CA 94267-0651

You can download, view, and print California tax forms and publications at [ftb.ca.gov](http://ftb.ca.gov).

OR to get forms by mail write to:

TAX FORMS REQUEST UNIT  
FRANCHISE TAX BOARD  
PO BOX 307  
RANCHO CORDOVA CA 95741-0307

For all other questions unrelated to withholding or to access the TTY/TDD numbers, see the information below.

### Internet and Telephone Assistance

Website: [ftb.ca.gov](http://ftb.ca.gov)

Telephone: 800.852.5711 from within the  
United States  
916.845.6500 from outside the  
United States

TTY/TDD: 800.822.6268 for persons with  
hearing or speech impairments

### Asistencia Por Internet y Teléfono

Sitio web: [ftb.ca.gov](http://ftb.ca.gov)

Teléfono: 800.852.5711 dentro de los  
Estados Unidos  
916.845.6500 fuera de los Estados  
Unidos

TTY/TDD: 800.822.6268 personas con  
discapacidades auditivas  
y del habla



## **Certification Regarding Debarment, Suspension, and Other Responsibility Matters**

The prospective participant certifies to the best of its knowledge and belief that it and the principals:

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- (b) Have not within a three year period preceding this proposal been convicted of or had a civil judgement rendered against them or commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction: violation of Federal or State antitrust statute or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and
- (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

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Typed Name & Title of Authorized Representative

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Signature of Authorized Representative Date

I am unable to certify to the above statements. My explanation is attached.

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EPA Form 5700-49 (11-88)



## CAMPAIGN CONTRIBUTIONS DISCLOSURE

In accordance with California law, bidders and contracting parties are required to disclose, at the time the application is filed, information relating to any campaign contributions made to South Coast Air Quality Management District (SCAQMD) Board Members or members/alternates of the MSRC, including: the name of the party making the contribution (which includes any parent, subsidiary or otherwise related business entity, as defined below), the amount of the contribution, and the date the contribution was made. 2 C.C.R. §18438.8(b).

California law prohibits a party, or an agent, from making campaign contributions to SCAQMD Governing Board Members or members/alternates of the Mobile Source Air Pollution Reduction Review Committee (MSRC) of more than \$250 while their contract or permit is pending before the SCAQMD; and further prohibits a campaign contribution from being made for three (3) months following the date of the final decision by the Governing Board or the MSRC on a donor's contract or permit. Gov't Code §84308(d). For purposes of reaching the \$250 limit, the campaign contributions of the bidder or contractor plus contributions by its parents, affiliates, and related companies of the contractor or bidder are added together. 2 C.C.R. §18438.5.

In addition, SCAQMD Board Members or members/alternates of the MSRC must abstain from voting on a contract or permit if they have received a campaign contribution from a party or participant to the proceeding, or agent, totaling more than \$250 in the 12-month period prior to the consideration of the item by the Governing Board or the MSRC. Gov't Code §84308(c).

The list of current SCAQMD Governing Board Members can be found at the SCAQMD website ([www.aqmd.gov](http://www.aqmd.gov)). The list of current MSRC members/alternates can be found at the MSRC website (<http://www.cleantransportationfunding.org>).

### **SECTION I.**

**Contractor (Legal Name):** \_\_\_\_\_

DBA, Name _____, County Filed in _____ Corporation, ID No. _____ LLC/LLP, ID No. _____
--

**List any parent, subsidiaries, or otherwise affiliated business entities of Contractor:**  
(See definition below).

\_\_\_\_\_  
\_\_\_\_\_

### **SECTION II.**

Has Contractor and/or any parent, subsidiary, or affiliated company, or agent thereof, made a campaign contribution(s) totaling \$250 or more in the aggregate to a current member of the South Coast Air Quality Management Governing Board or member/alternate of the MSRC in the 12 months preceding the date of execution of this disclosure?

Yes     No    **If YES, complete Section II below and then sign and date the form. If NO, sign and date below. Include this form with your submittal.**

**Campaign Contributions Disclosure, *continued*:**

Name of Contributor \_\_\_\_\_

\_\_\_\_\_  
Governing Board Member or MSRC Member/Alternate                      Amount of Contribution                      Date of Contribution

Name of Contributor \_\_\_\_\_

\_\_\_\_\_  
Governing Board Member or MSRC Member/Alternate                      Amount of Contribution                      Date of Contribution

Name of Contributor \_\_\_\_\_

\_\_\_\_\_  
Governing Board Member or MSRC Member/Alternate                      Amount of Contribution                      Date of Contribution

Name of Contributor \_\_\_\_\_

\_\_\_\_\_  
Governing Board Member or MSRC Member/Alternate                      Amount of Contribution                      Date of Contribution

**I declare the foregoing disclosures to be true and correct.**

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**DEFINITIONS**

**Parent, Subsidiary, or Otherwise Related Business Entity (2 Cal. Code of Regs., §18703.1(d).)**

- (1) **Parent subsidiary.** A parent subsidiary relationship exists when one corporation directly or indirectly owns shares possessing more than 50 percent of the voting power of another corporation.
- (2) **Otherwise related business entity.** Business entities, including corporations, partnerships, joint ventures and any other organizations and enterprises operated for profit, which do not have a parent subsidiary relationship are otherwise related if any one of the following three tests is met:
  - (A) **One business entity has a controlling ownership interest in the other business entity.**
  - (B) **There is shared management and control between the entities. In determining whether there is shared management and control, consideration should be given to the following factors:**
    - (i) **The same person or substantially the same person owns and manages the two entities;**
    - (ii) **There are common or commingled funds or assets;**
    - (iii) **The business entities share the use of the same offices or employees, or otherwise share activities, resources or personnel on a regular basis;**
    - (iv) **There is otherwise a regular and close working relationship between the entities; or**
  - (C) **A controlling owner (50% or greater interest as a shareholder or as a general partner) in one entity also is a controlling owner in the other entity.**



# South Coast Air Quality Management District

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

## Direct Deposit Authorization

### STEP 1: Please check all the appropriate boxes

- |  |  |
|--|--|
| <input type="checkbox"/> Individual (Employee, Governing Board Member) | <input type="checkbox"/> New Request           |
| <input type="checkbox"/> Vendor/Contractor                             | <input type="checkbox"/> Cancel Direct Deposit |
| <input type="checkbox"/> Changed Information                           |  |

### STEP 2: Payee Information

Last Name		First Name		Middle Initial	Title
Vendor/Contractor Business Name (if applicable)					
Address				Apartment or P.O. Box Number	
City		State	Zip	Country	
Taxpayer ID Number		Telephone Number		Email Address	

### Authorization

- I authorize South Coast Air Quality Management District (SCAQMD) to direct deposit funds to my account in the financial institution as indicated below. I understand that the authorization may be rejected or discontinued by SCAQMD at any time. If any of the above information changes, I will promptly complete a new authorization agreement. If the direct deposit is not stopped before closing an account, funds payable to me will be returned to SCAQMD for distribution. This will delay my payment.
- This authorization remains in effect until SCAQMD receives written notification of changes or cancellation from you.
- I hereby release and hold harmless SCAQMD for any claims or liability to pay for any losses or costs related to insufficient fund transactions that result from failure within the Automated Clearing House network to correctly and timely deposit monies into my account.

### STEP 3:

You must verify that your bank is a member of an Automated Clearing House (ACH). Failure to do so could delay the processing of your payment. You must attach a voided check or have your bank complete the bank information and the account holder must sign below.

### To be Completed by your Bank

<b>Staple Voided Check Here</b>	Name of Bank/Institution				
	Account Holder Name(s)				
	<input type="checkbox"/> Saving <input type="checkbox"/> Checking		Account Number	Routing Number	
	Bank Representative Printed Name		Bank Representative Signature		Date
	ACCOUNT HOLDER SIGNATURE:				Date

For SCAQMD Use Only

Input By \_\_\_\_\_

Date \_\_\_\_\_



**FORM B-1: ON-ROAD HEAVY-DUTY VEHICLE - NEW PURCHASE**

If you have any questions regarding this program or the application process, please contact **Ashkaan Nikravan** by phone at **(909) 396-3260** or by e-mail at: [anikravan@aqmd.gov](mailto:anikravan@aqmd.gov).

**For on-road heavy-duty vehicle new purchase projects, only vehicles with technologies that are certified at least 30 percent below the 0.20 NOx standard, such as electric vehicles, are eligible for CMP funding.**

Please complete one Form B-1 for each piece of equipment. For multiple unit requests, you may download the Form B-1 multiple-unit spreadsheet from [www.aqmd.gov/Moyer](http://www.aqmd.gov/Moyer) in lieu of filling out multiple B-1 forms.

**Part 1: Existing Vehicle Information**

Company name/ Organization name/ Individual name:	
Equipment Identifier (Company ID or Unit #):	
Is the vehicle location address the same as the applicant address? <input type="checkbox"/> Yes <input type="checkbox"/> NO (If not, please provide vehicle address below)	
Street Address:	
City:	
Zip Code:	
Vehicle type (Solid Waste Collection Vehicle, Stop-and-Go Street Sweeper, Urban Transit Bus, School Bus, Other Medium-Heavy Duty Vehicle (GVWR 14,001-33,000 lbs), Other Heavy-Heavy Duty Vehicle (GVWR >33,000 lbs), Other Transit Vehicle): _____	
Project Life (in years): _____ Equipment must operate for this full life; this life is equivalent to the contract and the reporting term.	
Vehicle Make:	Vehicle GVWR:
Vehicle Model:	Is this a public fleet vehicle? <input type="checkbox"/> Yes <input type="checkbox"/> No
Vehicle Model Year:	Registered Owner:
Department of Transportation Number (if interstate):	
California Highway Patrol CA Number (if applicable):	
Projected Year of New Vehicle Purchase:	



**Part 2. Fleet Rule Status**

CARB rules and regulations listed below severely limit, and in some cases eliminate, funding opportunities for certain vehicle types. In order to ensure eligibility, please confirm your project provides emission reductions that are *surplus* to CARB regulatory requirements by contacting SCAQMD’s Project Officer for this category, Ashkaan Nikravan by phone at (909) 396-3260 or by e-mail at: [anikravan@aqmd.gov](mailto:anikravan@aqmd.gov).

<p>ARB Rule Applicability (Check One):</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Fleet Rule for Transit Agencies (Urban Buses &amp; Transit Fleet Vehicles)</li> <li><input type="checkbox"/> SWCV Rule (Solid Waste Collection Vehicles, Excluding Transfer Trucks)</li> <li><input type="checkbox"/> Fleet Rule for Public Agencies &amp; Utilities (Municipal &amp; Utility Vehicles)</li> <li><input type="checkbox"/> Port Truck Regulation (Port &amp; Drayage Trucks)</li> <li><input type="checkbox"/> On-Road Private Truck and Bus Regulation (All diesel or alternative diesel – fueled vehicles with a GVWR &gt; 14,000 lbs operating in CA) <b>IF CHECKED PLEASE COMPLETE SECTION 3.</b></li> <li><input type="checkbox"/> None. Project is exempt from CARB Rules (supporting documentation validating exemption from any CARB rule is attached).</li> </ul>
<p>Is supporting documentation demonstrating compliance with the applicable CARB rule included in this application? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><b>(Applications submitted without supporting documentation that demonstrates an applicant’s current fleet compliance status will be deemed incomplete).</b></p>

**Part 3. Existing Vehicle Compliance Applicability – Private Fleets Only**

<p>What is the GVWR for this vehicle?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> 8,501 to 14,000*</li> <li><input type="checkbox"/> 14,001 to 26,000</li> <li><input type="checkbox"/> 26,001 or greater</li> </ul>
<p>What is your current fleet size? (Should reflect all diesel fuel vehicles with a GVWR greater than 14,000 lbs.) _____</p> <p>If applicable did you register your fleet through ARB’s TRUCRS Database by January 31, 2015?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Yes, please provide a copy of the Compliance Certificate from the TRUCRS Database.</li> <li><input type="checkbox"/> No</li> </ul>
<p>*Note: On-road heavy-duty diesel vehicles with this GVWR range will be considered for CMP funding on a case-by-case basis.</p>



**Part 4. Activity Information**

Please provide projected annual usage for the new equipment over the proposed life of the project. This projection should be based on actual usage data for the baseline, or existing, equipment. Applicants requesting evaluation based on fuel consumption **MUST** provide *both* mileage and fuel records from the past 24 months. Supporting documentation may be in the form of maintenance records, fuel receipts, logs, or other paperwork for each piece of baseline equipment covering at least the past 24 months. No such documentation is required for project evaluations based solely on mileage.

Total Annual Miles Traveled: \_\_\_\_\_ **or** Gallons of Fuel Used: \_\_\_\_\_

Percent Operation within CA: \_\_\_\_\_%      Percent Operation within District: \_\_\_\_\_%

**Part 5. New Vehicle’s Engine Information**

ARB Certification Executive Order (EO) Number: \_\_\_\_\_

NOTE: The proposed engine for the project must be consistent with the **Intended Service Class** per the EO (MHD Intended Service Class engines **cannot** be used for projects which have the HHD vehicle classifications). Applicant **must ATTACH a copy** of the referenced Executive Order with the application. Download the EO at: <http://www.arb.ca.gov/msprog/onroad/cert/cert.php>

Propulsion System Engine Make: _____	Propulsion System Engine Model Year: _____
Propulsion System Engine Model: _____	Fuel Type (Fuel Cell, Battery, etc.) : _____
Engine Family: _____	

**Part 6. Funding Information**

New Vehicle Cost (including tax): \$ \_\_\_\_\_

Note: You **MUST** attach a written estimate from the equipment vendor documenting the cost of the new vehicle; this quote must be obtained within 90 days prior to the closing date of the Program Announcement.

Applicant Grant Request per unit: \$ \_\_\_\_\_

New Equipment Vendor (name, address and phone): \_\_\_\_\_



### FORM B-2: ON-ROAD HEAVY-DUTY VEHICLE - REPOWER

If you have any questions regarding this program or the application process, please contact **Ashkaan Nikravan** by phone at **(909) 396-3260** or by e-mail at: [anikravan@aqmd.gov](mailto:anikravan@aqmd.gov).

**For On-Road vehicle repower projects, only alternative fuel engines that provide at least a 15 percent NOx reduction are eligible for funding, with the single exception of emergency vehicles and equipment (use Form B-3).**

Please complete one Form B-2 for each piece of equipment. For multiple unit requests, you may download the Form B-2 multiple-unit spreadsheet from [www.aqmd.gov/Moyer](http://www.aqmd.gov/Moyer) in lieu of filling out multiple B-2 forms.

#### **Part 1: Existing Vehicle Information**

Company name/ Organization name/ Individual name:	
Equipment Identifier (Company ID or Unit #):	
Is the vehicle location address the same as the applicant address? <input type="checkbox"/> Yes <input type="checkbox"/> No, (please provide vehicle address below)	
Street Address:	
City:	
Zip Code:	
Vehicle type (Solid Waste Collection Vehicle, Stop-and-Go Street Sweeper, School Bus, Other Medium-Heavy Duty Vehicle (GVWR 14,001-25,999 lbs), Other Heavy-Heavy Duty Vehicle):	
Project Life: ____ years. Equipment must operate for this full life; this life is equivalent to the contract and the reporting term.	
Vehicle Identification Number (VIN):	
Vehicle License Plate:	
Vehicle Make:	Vehicle GVWR:
Vehicle Model:	Is this a public fleet vehicle? <input type="checkbox"/> Yes <input type="checkbox"/> No
Vehicle Model Year:	Registered Owner:
Department of Transportation Number (if interstate):	
California Highway Patrol CA Number (if applicable):	
Projected Year of Repower Completion:	





### Part 2. Fleet Rule Status

**ARB Rule Applicability (Check One):**

NOTE: The CARB rules listed below severely limit, and in some cases eliminate, funding opportunities for certain vehicle types. In order to ensure eligibility, Please confirm your project provides emission reductions that are *surplus* to CARB regulatory requirements by contacting SCAQMD staff as indicated in Program Announcement #PA2015-07.

- Fleet Rule for Transit Agencies (Urban Buses & Transit Fleet Vehicles)
- SWCV Rule (Solid Waste Collection Vehicles, Excluding Transfer Trucks)
- Fleet Rule for Public Agencies & Utilities (Municipal & Utility Vehicles)
- Port Truck Regulation (Port & Drayage Trucks)
- On-Road Private Truck and Bus Regulation (All diesel or alternative diesel – fueled vehicles with a GVWR > 14,000 lbs operating in CA) **IF CHECKED PLEASE COMPLETE SECTION 3.**
- None. Project is exempt from CARB Rules/Regulations (supporting documentation validating exemption from any CARB rule is attached)

Is supporting documentation demonstrating compliance with the applicable CARB rule included in this application?  Yes  No

**(Applications submitted without supporting documentation that demonstrates an applicant’s current fleet compliance status will be deemed incomplete).**

### Part 3. Existing Vehicle Compliance Applicability – Private Fleets Only

What is the GVWR for this vehicle?  8,501 to 14,000\*  
 14,001 to 26,000  
 26,001 or greater

\*Note: On-road heavy-duty diesel vehicles with this GVWR range will be considered for CMP funding on a case-by-case basis.

What is your current fleet size? (Should reflect all diesel fuel vehicles with a GVWR greater than 14,000 lbs.) \_\_\_\_\_

If applicable did you register your fleet through ARB’s TRUCRS Database by January 31, 2015?

Yes, please provide a copy of the Compliance Certificate from the TRUCRS Database.  No

### Part 4. Activity Information

Please provide projected annual usage for the new engine over the proposed life of the project. This projection should be based on actual usage data for the baseline, or existing, vehicle/engine. Applicants requesting evaluation based on fuel consumption **MUST** provide *both* mileage and fuel records from the past 24 months. Supporting documentation may be in the form of maintenance records, fuel receipts, logs, or other paperwork for each piece of baseline equipment covering at least the past 24 months. No such documentation is required for project evaluations based solely on mileage.

Total Annual Miles Traveled: \_\_\_\_\_ **or** Gallons of Fuel Used: \_\_\_\_\_

Percent Operation within CA: \_\_\_\_\_%

Percent Operation within District: \_\_\_\_\_%



**Part 5. Baseline Engine Information**

Fuel Type:	Engine Year:
Engine Make:	Engine Serial No.:
Engine Model:	Engine Family:
ARB Certification Executive Order (EO) Number: _____	
Download the EO at: <a href="http://www.arb.ca.gov/msprog/onroad/cert/cert.php">http://www.arb.ca.gov/msprog/onroad/cert/cert.php</a>	

**Part 6. New Reduced-Emission Engine Information**

Fuel Type:	Engine Year: _____
Engine Make: _____	Engine Family:
Engine Model: _____	Engine Horse Power:
ARB Certification Executive Order (EO) Number: _____	
NOTE: The proposed engine for the project must be consistent with the Intended Service Class per the EO (MHD Intended Service Class engines cannot be used for projects which have the HHD vehicle classifications). Applicant must ATTACH a copy of the referenced Executive Order with the application. Download the EO at: <a href="http://www.arb.ca.gov/msprog/onroad/cert/cert.php">http://www.arb.ca.gov/msprog/onroad/cert/cert.php</a>	

**Part 7. Funding Information**

Note: You <b>MUST</b> attach a written estimate from the equipment vendor documenting the cost of the new equipment; this quote must be obtained within 90 days prior to the closing date of the Program Announcement.
New Engine Cost:
New Engine Installation Cost:
Engine Core Charge (optional):
Grant Request: \$
New Engine Vendor:
New Engine Installer:



**FORM B-3: EMERGENCY VEHICLES (FIRE APPARATUS)**

Eligible Emergency Vehicle (Fire Apparatus) projects are those in which a new or used replacement vehicle with an engine meeting the current model year California emission standard replaces an older, more polluting fire apparatus. The older, replaced vehicle must be destroyed. A fire truck reuse option is also available, which is also known as a “2 for 1 replacement”. The fire truck reuse option allows fire departments to give away the existing old vehicle and destroy another older vehicle in its place.

If you have any questions regarding this program or the application process, please contact **Ashkaan Nikravan** by phone at **(909) 396-3260** or by e-mail at: [anikravan@aqmd.gov](mailto:anikravan@aqmd.gov).

Please complete one Form B-3 for each piece of equipment. For multiple unit requests, you may download the Form B-3 multiple-unit spreadsheet from [www.aqmd.gov/Moyer](http://www.aqmd.gov/Moyer) in lieu of filling out multiple B-3 forms.

**Part 1a: Existing Vehicle Information**

Company name/ Organization name/ Individual name:	
Equipment Identifier (Company ID or Unit #):	
Is the vehicle location address the same as the applicant address? <input type="checkbox"/> Yes <input type="checkbox"/> No, (please provide vehicle address below)	
Street Address:	
City:	Zip Code:
Vehicle type (Solid Waste Collection Vehicle, Stop-and-Go Street Sweeper, School Bus, Other Medium-Heavy Duty Vehicle (GVWR 14,001-25,999 lbs), Other Heavy-Heavy Duty Vehicle):	
Project Life: ____ years. Equipment must operate for this full life; this life is equivalent to the contract and the reporting term.	
Vehicle Identification Number (VIN):	
Vehicle License Plate:	
Vehicle Make:	Vehicle GVWR:
Vehicle Model:	Is this a public fleet vehicle? <input type="checkbox"/> Yes <input type="checkbox"/> No
Vehicle Model Year:	Registered Owner:
Department of Transportation Number (if interstate):	
California Highway Patrol CA Number (if applicable):	
I have attached proof of California registration for the past 24-months and a copy of the Title, proving ownership (without lien holder) for each project vehicle. YES NO (circle one) (if not, why not? _____)	



**Part 1b: 2<sup>nd</sup> Existing Vehicle Information (only required if proposing a “2 for 1” Replacement Project)**

Company name/ Organization name/ Individual name:	
Equipment Identifier (Company ID or Unit #):	
Is the vehicle location address the same as the applicant address? <input type="checkbox"/> Yes <input type="checkbox"/> No, (please provide vehicle address below)	
Street Address:	
City:	
Zip Code:	
Vehicle type (Solid Waste Collection Vehicle, Stop-and-Go Street Sweeper, School Bus, Other Medium-Heavy Duty Vehicle (GVWR 14,001-25,999 lbs), Other Heavy-Heavy Duty Vehicle):	
Project Life: _____ years. Equipment must operate for this full life; this life is equivalent to the contract and the reporting term.	
Vehicle Identification Number (VIN):	
Vehicle License Plate:	
Vehicle Make:	Vehicle GVWR:
Vehicle Model:	Is this a public fleet vehicle? <input type="checkbox"/> Yes <input type="checkbox"/> No
Vehicle Model Year:	Registered Owner:
Department of Transportation Number (if interstate):	
California Highway Patrol CA Number (if applicable):	
Projected Year of Repower Completion:	

**Part 2. CARB Fleet Rule Self-Certification Statement**

**This is to certify that the project vehicle(s) being submitted for funding under this category are exempt from ARB Regulations based on the fact that they are classified as authorized emergency vehicle as described under California Vehicle Code Sections 27156.2 and 165.**

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_



### Part 3. Activity Information

Please provide projected annual usage for the new equipment over the proposed life of the project. This projection should be based on actual usage data for the baseline, or existing, equipment. Applicants requesting evaluation based on fuel consumption <b>MUST</b> provide <i>both</i> mileage and fuel records from the past 24 months. Supporting documentation may be in the form of maintenance records, fuel receipts, logs, or other paperwork for each piece of baseline equipment covering at least the past 24 months. No such documentation is required for project evaluations based solely on mileage.	
Total Annual Miles Traveled: _____ <b>or</b> Gallons of Fuel Used: _____	
Percent Operation within CA: _____%	Percent Operation within District: _____%

### Part 4. Baseline Engine Information

Fuel Type:	Engine Year:
Engine Make:	Engine Serial No.:
Engine Model:	Engine Family:
ARB Certification Executive Order (EO) Number: _____ Download the EO at: <a href="http://www.arb.ca.gov/msprog/onroad/cert/cert.php">http://www.arb.ca.gov/msprog/onroad/cert/cert.php</a>	

### Part 5. New Reduced-Emission Engine Information

Fuel Type:	Engine Year: _____
Engine Make: _____	Engine Family:
Engine Model: _____	Engine Horse Power:
ARB Certification Executive Order (EO) Number: _____ <b>The proposed engine for the project must be consistent with the Intended Service Class per the EO (MHD Intended Service Class engines cannot be used for projects which have the HHD vehicle classifications). Applicant must ATTACH a copy of the referenced Executive Order with the application.</b> Download the EO at: <a href="http://www.arb.ca.gov/msprog/onroad/cert/cert.php">http://www.arb.ca.gov/msprog/onroad/cert/cert.php</a>	



### **Part 6. Funding Information**

Note: You <b><u>MUST</u></b> attach a written estimate from the equipment vendor documenting the cost of the new equipment; this quote must be obtained within 90 days prior to the closing date of the Program Announcement.
New Engine Cost:
New Engine Installation Cost:
Engine Core Charge (optional):
Grant Request: \$
New Engine Vendor:
New Engine Installer:



### FORM C-1: OFF-ROAD EQUIPMENT REPLACEMENT

If you have any questions regarding this program or the application process, please contact **Frank Motavassel** by phone at **(909) 396-2152** or by e-mail at: [fmotavassel@aqmd.gov](mailto:fmotavassel@aqmd.gov).

Note that projects approved for Large Off-Road Fleets must be in operation no later than October 31, 2016.

Please complete one Form C-1 for each piece of equipment. For multiple unit requests, you may download the Form C-1 multiple-unit spreadsheet from [www.aqmd.gov/Moyer](http://www.aqmd.gov/Moyer) in lieu of filling out multiple C-1 forms.

#### Part 1: Existing Equipment Information (Baseline)

Company name/ Organization name/ Individual name:	
Is equipment currently subject to CARB's Off-Road Regulation? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Off-road equipment applicants subject to CARB's In-Use Off-Road Diesel Vehicle Regulation must submit their DOORS fleet compliance snapshot and vehicle list. You may contact the DOORS hotline at (877) 593-6677 for assistance.	
Baseline Equipment Identifier (Company ID or Unit #):	
What is the primary function of this equipment?	
Has this equipment received Carl Moyer Program funds in the past? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Is the vehicle location address the same as the applicant address? <input type="checkbox"/> Yes <input type="checkbox"/> No	
If "No", please provide vehicle address here:	
Is existing equipment in operable condition?	
How long has applicant owned the existing piece of equipment?	
Baseline Equipment Type (e.g. tractor, scraper, roller, loader, etc.):	
Number of Main/Front Engines on this Unit?	
Number of Auxiliary/Rear Engines on this Unit?	
Baseline Equipment Serial Number:	
Baseline Equipment Make & Model: Make:	Model:
Baseline Equipment Model Year:	
Is 2 for 1 Replacement Applied? YES or NO (circle one)	
Is this vehicle used in Agricultural operation? YES or NO (circle one)	
If Yes, What percent of the time of the equipment used in Agricultural operations? _____%	
Does the existing equipment have a functioning, non- resettable hour meter?	
Proposed Project Life (same as contract term/how long you must operate equipment): _____ years	



**Part 2: Existing (baseline) Engine Information (one section for each engine)**

Engine Type: <input type="checkbox"/> Main (Front) <b>-OR-</b> <input type="checkbox"/> Auxiliary (Rear) # <u>    </u> of <u>    </u>	
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Annual activity in units of hour per year: _____ (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	
Engine Type: <input type="checkbox"/> Main (Front) <b>-OR-</b> <input type="checkbox"/> Auxiliary (Rear) # <u>    </u> of <u>    </u>	
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Annual activity in units of hour per year: _____ (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	
Engine Type: <input type="checkbox"/> Main (Front) <b>-OR-</b> <input type="checkbox"/> Auxiliary (Rear) # <u>    </u> of <u>    </u>	
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Annual activity in units of hour per year: _____ (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	
Engine Type: <input type="checkbox"/> Main (Front) <b>-OR-</b> <input type="checkbox"/> Auxiliary (Rear) # <u>    </u> of <u>    </u>	
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Annual activity in units of hour per year: _____ (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	





**Part 3: New Equipment Information**

New Equipment Type (e.g. tractor, scraper, roller, loader, etc.):
New Equipment Make:
New Equipment Model: Equipment
New Equipment Model Year:
# of Main/Front Engines:
# of Auxiliary/Rear Engines:
Percent Operation in California:
Percent Operation within the South Coast Air Quality Management District (%):

**Part 4: New Equipment Vendor Information**

Name and location of dealership assisting with this equipment:
Equipment Vendor Contact:
Equipment Vendor Phone:

**Part 5: New Engine Information (one section for each engine)**

Engine Type: <input type="checkbox"/> Main (Front) <b>-OR-</b> <input type="checkbox"/> Auxiliary (Rear) # <u>    </u> of <u>    </u>	
Fuel Type:	New Engine Make:
New Engine Model:	New Engine Year:
Engine Serial No.:	New Engine Horsepower:
New Engine Tier:	New Engine Family:
Annual activity in units of hour per year: _____ (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	
Engine Type: <input type="checkbox"/> Main (Front) <b>-OR-</b> <input type="checkbox"/> Auxiliary (Rear) # <u>    </u> of <u>    </u>	
Fuel Type:	New Engine Make:
New Engine Model:	New Engine Year:
Engine Serial No.:	New Engine Horsepower:
New Engine Tier:	New Engine Family:
Annual activity in units of hour per year: _____ (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	



**Part 5: New Engine Information (1 section for each engine), cont'd.**

Engine Type: <input type="checkbox"/> Main (Front) <b>-OR-</b> <input type="checkbox"/> Auxiliary (Rear) # <u>    </u> of <u>    </u>	
Fuel Type:	New Engine Make:
New Engine Model:	New Engine Year:
Engine Serial No.:	New Engine Horsepower:
New Engine Tier:	New Engine Family:
Annual activity in units of hour per year: _____ (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	
Engine Type: <input type="checkbox"/> Main (Front) <b>-OR-</b> <input type="checkbox"/> Auxiliary (Rear) # <u>    </u> of <u>    </u>	
Fuel Type:	New Engine Make:
New Engine Model:	New Engine Year:
Engine Serial No.:	New Engine Horsepower:
New Engine Tier:	New Engine Family:
Annual activity in units of hour per year: _____ (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	

**Part 6: Funding/Cost Information for this Repower Project**

You **MUST** attach a written estimate from the equipment vendor documenting the cost of the device; this quote must be obtained within 90 days prior to the closing date of the Program Announcement.

Number of engines for this Unit? Main (Front) Engine(s): _____ Auxiliary (Rear) Engine(s): _____
<b>New Replacement Unit Cost:</b> \$ _____
<b>Tax:</b> \$ _____
<b>Total Cost:</b> \$ _____
Applicant Co-Funding Amount (if any): \$ _____
Applicant Grant Request Amount: \$ _____



**FORM C-2: OFF-ROAD EQUIPMENT REPOWER & RETROFIT**  
**(use form C-3 for Retrofit-Only projects)**

All off-road repower projects must include installation of the highest level CARB-verified retrofit device if one is available. Repower projects are not disqualified from participation in the Carl Moyer Program if retrofit devices are not available, technically infeasible or unsafe. If installation of a retrofit device is infeasible or unsafe you **MUST** attach documentation in accordance with CARB requirements, as summarized at: <http://www.arb.ca.gov/msprog/ordiesel/vdecssafety.htm>.

If you have any questions regarding this program or the application process, please contact Frank Motavassel by phone at (909) 396-2152 or by e-mail at: [fmotavassel@aqmd.gov](mailto:fmotavassel@aqmd.gov).

Note that projects approved for Large Off-Road Fleets must be in operation no later than October 31, 2016. Please complete one Form C-2 for each piece of equipment. For multiple unit requests, you may download the Form C-2 multiple-unit spreadsheet from [www.aqmd.gov/Moyer](http://www.aqmd.gov/Moyer) in lieu of filling out multiple C-2 forms.

**Part 1: Equipment Information**

Company name/ Organization name/ Individual name:
Is equipment currently subject to CARB’s Off-Road Regulation? <input type="checkbox"/> Yes <input type="checkbox"/> No Off-road equipment applicants subject to CARB’s In-Use Off-Road Diesel Vehicle Regulation must submit their DOORS fleet compliance snapshot and vehicle list. You may contact the DOORS hotline at (877) 593-6677 for assistance.
Baseline Equipment Identifier (Company ID or Unit #):
What is the primary function of this equipment?
Has this equipment received Carl Moyer Program funds in the past? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is the vehicle location address the same as the applicant address? <input type="checkbox"/> Yes <input type="checkbox"/> No. If “No”, provide vehicle address here:
Is existing equipment in operable condition?
How long has applicant owned the existing piece of equipment?
Equipment Type (e.g. tractor, scraper, roller, loader, etc.):
Number of Main Engines on this Unit?
Number of Auxiliary Engines on this Unit?
Equipment Serial Number or VIN:
Baseline Equipment Make & Model: Make: _____ Model: _____
Equipment Model Year:
Is this vehicle used in Agricultural operation? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, What percent of the time of the equipment used in Agricultural operations? _____%
Does the existing equipment have a functioning, non- resettable hour meter? <input type="checkbox"/> Yes <input type="checkbox"/> No
Proposed Project Life (same as contract term/how long you must operate equipment): _____ years



**Part 2: Existing Engine Information (one section for each engine)**

Method proposed for rendering the baseline engine(s) inoperable:	
Engine Type: <input type="checkbox"/> Main (Front) <b>-OR-</b> <input type="checkbox"/> Auxiliary (Rear) # <u>    </u> of <u>    </u>	
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Annual activity in units of hour per year: _____ (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	
Engine Type: <input type="checkbox"/> Main (Front) <b>-OR-</b> <input type="checkbox"/> Auxiliary (Rear) # <u>    </u> of <u>    </u>	
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Annual activity in units of hour per year: _____ (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	
Engine Type: <input type="checkbox"/> Main (Front) <b>-OR-</b> <input type="checkbox"/> Auxiliary (Rear) # <u>    </u> of <u>    </u>	
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Annual activity in units of hour per year: _____ (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	
Engine Type: <input type="checkbox"/> Main (Front) <b>-OR-</b> <input type="checkbox"/> Auxiliary (Rear) # <u>    </u> of <u>    </u>	
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Annual activity in units of hour per year: _____ (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	



**Part 3: New Engine Information (one section for each engine)**

Engine Type: <input type="checkbox"/> Main (Front) <b>-OR-</b> <input type="checkbox"/> Auxiliary (Rear) # <u>    </u> <b>of</b> <u>    </u>	
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Annual activity in units of hour per year: _____ (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	
Engine Type: <input type="checkbox"/> Main (Front) <b>-OR-</b> <input type="checkbox"/> Auxiliary (Rear) # <u>    </u> <b>of</b> <u>    </u>	
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Annual activity in units of hour per year: _____ (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	
Engine Type: <input type="checkbox"/> Main (Front) <b>-OR-</b> <input type="checkbox"/> Auxiliary (Rear) # <u>    </u> <b>of</b> <u>    </u>	
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Annual activity in units of hour per year: _____ (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	
Engine Type: <input type="checkbox"/> Main (Front) <b>-OR-</b> <input type="checkbox"/> Auxiliary (Rear) # <u>    </u> <b>of</b> <u>    </u>	
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Annual activity in units of hour per year: _____ (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	



**Part 4: New Engine Vendor Information**

Name and location of dealership assisting with this equipment:
Equipment Vendor Contact:
Equipment Vendor Phone:

**Part 5: Retrofit Information (applicable to Repower projects)**

You **MUST** attach a copy of the CARB Executive Order for the retrofit device and indicate (circle) on the Executive Order Attachment the engine family name for the engine on which the device will be installed. Download the EO at: <http://www.arb.ca.gov/diesel/cv.htm>

**NOTE:** Off-road retrofits must include installation of the highest level CARB-verified retrofit device.

On which repowered engine will this device be installed? <input type="checkbox"/> Main (Front) # ___ of ___ <input type="checkbox"/> Auxiliary (Rear) # ___ of ___	
Retrofit Device CARB Executive Order Number:	
Retrofit Device Make:	Verified NOx Reduction: %
Retrofit Device Model:	Verified PM Reduction: %
Retrofit Family Name:	Verified ROG Reduction: %
Verification Level:	Retrofit Device Serial No.
On which repowered engine will this device be installed? <input type="checkbox"/> Main (Front) # ___ of ___ <input type="checkbox"/> Auxiliary (Rear) # ___ of ___	
Retrofit Device CARB Executive Order Number:	
Retrofit Device Make:	Verified NOx Reduction: %
Retrofit Device Model:	Verified PM Reduction: %
Retrofit Family Name:	Verified ROG Reduction: %
Verification Level:	Retrofit Device Serial No.



**Part 6a: Funding/Cost Information for Engine Repower**

You **MUST** attach a written estimate from the equipment vendor documenting the cost of the device; this quote must be obtained within 90 days prior to the closing date of the Program Announcement.

Engine Type? Main (Front) Engine(s): _____ Auxiliary (Rear) Engine(s): _____
<p><b>New Engine Unit Cost:</b> \$ _____ (Quantity of this Engine Type: _____)</p> <p><b>Tax:</b> \$ _____</p> <p><b>Installation Cost:</b> \$ _____</p> <p><b>Total Repower Cost:</b> \$ _____</p>
Applicant Co-Funding Amount (if any): \$
Grant Request Amount for this Repower: \$
Engine Type? Main (Front) Engine(s): _____ Auxiliary (Rear) Engine(s): _____
<p><b>New Engine Unit Cost:</b> \$ _____ (Quantity of this Engine Type: _____)</p> <p><b>Tax:</b> \$ _____</p> <p><b>Installation Cost:</b> \$ _____</p> <p><b>Total Repower Cost:</b> \$ _____</p>
Applicant Co-Funding Amount (if any): \$
Grant Request Amount for Repower: \$



**Part 6b: Funding/Cost Information for Engine Retrofits**

You **MUST** attach a written estimate from the equipment vendor documenting the cost of the device; this quote must be obtained within 90 days prior to the closing date of the Program Announcement. The data-logging cost of a retrofit project cannot be included in the eligible project cost.

On which repowered engine will this device be installed? <input type="checkbox"/> Main (Front) # <u>    of    </u> <input type="checkbox"/> Auxiliary (Rear) # <u>    of    </u>
Retrofit Device Unit Cost: \$  Tax: \$  Installation Cost: \$  Maintenance Cost: \$ (if grant funding assistance is requested)  Total Retrofit Cost: \$
Retrofit Device Vendor and Installer:
Grant Request for Retrofit: \$

On which repowered engine will this device be installed? <input type="checkbox"/> Main (Front) # <u>    of    </u> <input type="checkbox"/> Auxiliary (Rear) # <u>    of    </u>
Retrofit Device Unit Cost: \$  Tax: \$  Installation Cost: \$  Maintenance Cost: \$ (if grant funding assistance is requested)  Total Retrofit Cost: \$
Retrofit Device Vendor and Installer:
Grant Request for Retrofit: \$

**Part 6c: Total Project Costs and Grant Request for full Project**

Total Project Cost (Repower(s) + Retrofit(s)):
Total Grant Request (Repower(s) + Retrofit(s)):





### FORM C-3: OFF-ROAD EQUIPMENT RETROFIT

If you have any questions regarding this program or the application process, please contact **Frank Motavassel** by phone at **(909) 396-2152** or by e-mail at: [fmotavassel@aqmd.gov](mailto:fmotavassel@aqmd.gov).

Note that projects approved for Large Off-Road Fleets must be in operation no later than October 31, 2016.

Please complete one Form C-3 for each piece of equipment. For multiple unit requests, you may download the Form C-3 multiple-unit spreadsheet from [www.aqmd.gov/Moyer](http://www.aqmd.gov/Moyer) in lieu of filling out multiple C-3 forms.

#### **Part 1: Equipment Information**

Company name/ Organization name/ Individual name:
Is equipment currently subject to CARB’s Off-Road Regulation? <input type="checkbox"/> Yes <input type="checkbox"/> No Off-road equipment applicants subject to CARB’s In-Use Off-Road Diesel Vehicle Regulation must submit their DOORS fleet compliance snapshot and vehicle list. You may contact the DOORS hotline at (877) 593-6677 for assistance.
Baseline Equipment Identifier (Company ID or Unit #):
What is the primary function of this equipment?
Has this equipment received Carl Moyer Program funds in the past? <input type="checkbox"/> Yes <input type="checkbox"/> No
Is the vehicle location address the same as the applicant address? <input type="checkbox"/> Yes <input type="checkbox"/> No If “No”, provide vehicle address here:
Is existing equipment in operable condition?
How long has applicant owned the existing piece of equipment?
Equipment Type (e.g. tractor, scraper, roller, loader, etc.):
Number of Main Engines on this Unit?
Number of Auxiliary Engines on this Unit?
Equipment Serial Number or VIN:
Baseline Equipment Make & Model: Make: _____ Model: _____
Equipment Model Year:
Is this vehicle used in Agricultural operation? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, What percent of the time of the equipment used in Agricultural operations? _____%
Does the existing equipment have a functioning, non- resettable hour meter?
Proposed Project Life (same as contract term/how long you must operate equipment): _____ <b>years</b>



**Part 2: Existing Engine Information (one section for each engine)**

Method proposed for rendering the baseline engine(s) inoperable:	
Engine Type: <input type="checkbox"/> Main (Front) <b>-OR-</b> <input type="checkbox"/> Auxiliary (Rear) # <u>    </u> of <u>    </u>	
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Annual activity in units of hour per year: _____ (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	
Engine Type: <input type="checkbox"/> Main (Front) <b>-OR-</b> <input type="checkbox"/> Auxiliary (Rear) # <u>    </u> of <u>    </u>	
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Annual activity in units of hour per year: _____ (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	
Engine Type: <input type="checkbox"/> Main (Front) <b>-OR-</b> <input type="checkbox"/> Auxiliary (Rear) # <u>    </u> of <u>    </u>	
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Annual activity in units of hour per year: _____ (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	
Engine Type: <input type="checkbox"/> Main (Front) <b>-OR-</b> <input type="checkbox"/> Auxiliary (Rear) # <u>    </u> of <u>    </u>	
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Annual activity in units of hour per year: _____ (hr/yr) Note: Annual gallons may not be used to document activity unless the fuel tank is dedicated for the use of this single unit.	



**Part 3: Retrofit Information**

You **MUST** attach a copy of the CARB Executive Order for the retrofit device and indicate (circle) on the Executive Order Attachment the engine family name for the engine on which the device will be installed. Download the EO at: <http://www.arb.ca.gov/diesel/cv.htm>

**NOTE:** Off-road retrofits must include installation of the highest level CARB-verified retrofit device.

Engine Type: <input type="checkbox"/> Main (Front) -OR- <input type="checkbox"/> Auxiliary (Rear)		#	of
Retrofit Device Make:	Verified NOx Reduction:	%	
Retrofit Device Model:	Verified PM Reduction:	%	
Retrofit Family Name:	Verified ROG Reduction:	%	
Verification Level:	Retrofit Device Serial No.		
Engine Type: <input type="checkbox"/> Main (Front) -OR- <input type="checkbox"/> Auxiliary (Rear)		#	of
Retrofit Device Make:	Verified NOx Reduction:	%	
Retrofit Device Model:	Verified PM Reduction:	%	
Retrofit Family Name:	Verified ROG Reduction:	%	
Verification Level:	Retrofit Device Serial No.		
Engine Type: <input type="checkbox"/> Main (Front) -OR- <input type="checkbox"/> Auxiliary (Rear)		#	of
Retrofit Device Make:	Verified NOx Reduction:	%	
Retrofit Device Model:	Verified PM Reduction:	%	
Retrofit Family Name:	Verified ROG Reduction:	%	
Verification Level:	Retrofit Device Serial No.		
Engine Type: <input type="checkbox"/> Main (Front) -OR- <input type="checkbox"/> Auxiliary (Rear)		#	of
Retrofit Device Make:	Verified NOx Reduction:	%	
Retrofit Device Model:	Verified PM Reduction:	%	
Retrofit Family Name:	Verified ROG Reduction:	%	
Verification Level:	Retrofit Device Serial No.		



**Part 4: Funding/Cost Information for Engine Retrofit(s)**

You **MUST** attach a written estimate from the equipment vendor documenting the cost of the device; this quote must be obtained within 90 days prior to the closing date of the Program Announcement. The data-logging cost of a retrofit project cannot be included in the eligible project cost.

On which repowered engine will this device be installed? <input type="checkbox"/> Main (Front) # <u>    of    </u>	
<input type="checkbox"/> Auxiliary (Rear) # <u>    of    </u>	
Retrofit Device Unit Cost: \$	
Tax: \$	
Installation Cost: \$	
Maintenance Cost: \$	(if grant funding assistance is requested)
Total Retrofit Cost: \$	
Retrofit Device Vendor and Installer:	
Grant Request for Retrofit: \$	

On which repowered engine will this device be installed? <input type="checkbox"/> Main (Front) # <u>    of    </u>	
<input type="checkbox"/> Auxiliary (Rear) # <u>    of    </u>	
Retrofit Device Unit Cost: \$	
Tax: \$	
Installation Cost: \$	
Maintenance Cost: \$	(if grant funding assistance is requested)
Total Retrofit Cost: \$	
Retrofit Device Vendor and Installer:	
Grant Request for Retrofit: \$	



## FORM C-4: CARGO HANDLING EQUIPMENT ELECTRIFICATION

If you have any questions regarding this program or the application process, please contact **Greg Ushijima** by phone at **(909) 396-3301** or by e-mail at: [gushijima@aqmd.gov](mailto:gushijima@aqmd.gov).

Please complete one Form C-4 for each piece of equipment. For multiple unit requests, you may download the Form C-4 multiple-unit spreadsheet from [www.aqmd.gov/Moyer](http://www.aqmd.gov/Moyer) in lieu of filling out multiple C-4 forms.

Please Check One:  Rubber-Tire Gantry Crane Electrification  
 Other Cargo Handling Equipment (CHE) Electrification

### Part 1: Existing Equipment Information

Company name/ Organization name/ Individual name:	
Is equipment currently subject to CARB’s Cargo Handling Equipment regulation? <input type="checkbox"/> Yes <input type="checkbox"/> No If YES, attach evidence that your fleet is in full compliance of this regulation.	
If NO, and the applicant is not able to document that project equipment is not subject to the CARB regulation, then the project is ineligible.	
Baseline Equipment Identifier (Company ID or Unit #):	
What is the primary function of this equipment?	
Has this equipment received Carl Moyer Program funds in the past? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Is the vehicle location address the same as the applicant address? <input type="checkbox"/> Yes <input type="checkbox"/> No If “No”, please provide vehicle address here:	
Is existing equipment in operable condition?	
How long has applicant owned the existing piece of equipment?	
Baseline Equipment Type (e.g. yard trucks, top handlers, side handlers, reach stackers, forklifts, loaders, aerial lifts, excavators, dozers, etc.):	
Number of Main Engines on this Unit?	
Number of Auxiliary Engines on this Unit?	
Baseline Equipment Serial Number:	
Baseline Equipment Make & Model:	Make: _____ Model: _____
Baseline Equipment Model Year:	
Does the existing equipment have a functioning, non- resettable hour meter?	
Proposed Project Life (same as contract term/how long you must operate equipment): _____ years	



**Part 2a: Existing (baseline) Engine Information (one section for each engine)**

Method proposed for rendering the baseline engine(s) inoperable:	
Engine Type: <input type="checkbox"/> Main (Front) <b>-OR-</b> <input type="checkbox"/> Auxiliary (Rear) # <u>    </u> of <u>    </u>	
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Engine Type: <input type="checkbox"/> Main (Front) <b>-OR-</b> <input type="checkbox"/> Auxiliary (Rear) # <u>    </u> of <u>    </u>	
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Engine Type: <input type="checkbox"/> Main (Front) <b>-OR-</b> <input type="checkbox"/> Auxiliary (Rear) # <u>    </u> of <u>    </u>	
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:
Engine Type: <input type="checkbox"/> Main (Front) <b>-OR-</b> <input type="checkbox"/> Auxiliary (Rear) # <u>    </u> of <u>    </u>	
Fuel Type:	Baseline Engine Make:
Baseline Engine Model:	Baseline Engine Year:
Engine Serial No.:	Baseline Engine Horsepower:
Baseline Engine Tier:	Baseline Engine Family:

**Part 2b: Existing (baseline) Engine Activity Information**

Annual Operation Hours (hours/year):
Annual Fuel Usage (gallons per year):
Fuel Type:



**Part 3: Project Description**

**Please provide a full description of the proposed project. Include specifications for the equipment electrification and associated infrastructure.**

(Attach additional sheets if more space is needed.)

**Part 4: Electrification Vendor Information**

Equipment Vendor/Contractor Company:
Equipment Vendor/Contractor Contact Name:
Equipment Vendor/Contractor Phone Number:
Equipment Vendor/Contractor Email:

**Part 5: Projected New Equipment Activity Information**

Estimated Future Annual Operation Hours (hours/year):
Annual Fuel Usage (gallons per year):
Fuel Type:



### **Part 6: Funding/Cost Information for this Electrification Project**

You **MUST** attach a written estimate from the equipment vendor/contractor documenting the cost of the device; this quote must be obtained within 90 days prior to the closing date of the Program Announcement. Quote must itemize material costs and labor costs separately and must provide explanatory details on each line item.

<b>Total Project Materials Cost (incl. tax): \$</b>
<b>Total Project Labor Cost: \$</b>
<b>Total Project Cost: \$</b>
Applicant Co-Funding Amount (if any): \$
Applicant Grant Request Amount: \$





**FORM D-1: MARINE VESSELS - REPOWER**

If you have any questions regarding this program or the application process, please contact:

- Mark Coleman at (909) 396-3074 or [mcoleman@aqmd.gov](mailto:mcoleman@aqmd.gov)
- Von Loveland at (909) 396-3063 or [vloveland@aqmd.gov](mailto:vloveland@aqmd.gov)

Please complete one form for each marine vessel.

**Part 1: Existing Equipment Information**

Company name/ Organization name:	
All Commercial Harbor Craft are currently subject to CARB’s Commercial Harbor Craft regulation. Attach a copy of your most recent CARB Commercial Harbor Craft Initial Report, and all updates.	
Vessel Name:	
Has this equipment received Carl Moyer Program funds in the past? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Port/Harbor:	
Terminal:	Pier:
Vessel berth / slip number:	
Primary Vessel Use: (Commercial Fishing, Charter Fishing, Crew & Supply, Pilot, Work, Ferry/ Excursion, Tow, Tug, Barge, Other):	
Annual Hours of operation for Primary Vessel Use: _____ hr/yr	
Secondary Vessel Use (If Applicable):	
Annual Hours of operation for Secondary Vessel Use: _____ hr/yr	
Vessel Make:	
Vessel Model:	
Vessel Model Year:	
U.S. Coast Guard Documentation Number (IMO Lloyd’s Number if oceangoing vessel, or CF# AND CA Department of Fish & Game license for fishing vessels manufactured out of the United States or less than five net tons displacement):	
Does the project vessel utilize a wet exhaust system: <input type="checkbox"/> Yes <input type="checkbox"/> No	
Total Number of Main Engines on this Vessel?	
Total Number of Auxiliary Engines on this Vessel?	



**Part 2. Usage/Activity Information**

Provide projected annual usage for the vessel/engines over the proposed life of the project. This projection should be based on actual usage for the marine vessel. You **MUST** attach documentation supporting the projected annual usage and operation within District and California waters. Supporting hours of operation documentation may be in the form of maintenance records, hour-meter reports, logs, or other paperwork for each piece of baseline equipment covering at least the past 24 months.

The vessel is required to have a functioning non-resettable hour meter for the full project life. Initial here to indicate understanding of this requirement: _____
Project Life _____ years. Project Life is equivalent to the contract reporting term. (Project life may be adjusted by SCAQMD)
Number of Propulsion Engines to be repowered: _____
Number of Auxiliary Engines to be repowered: _____
For each Propulsion engine: Hours of Operation (per year, per engine): _____
For each Auxiliary engine: Hours of Operation (per year, per engine): _____
Percent of Operation within California waters: _____%
Percent of Operation within District waters: _____%
Justification for purchasing new transmission (if applicable):   
<u>Electronic Monitoring Unit</u> I understand that a new Electronic Monitoring Unity (EMU) will be installed as part of this Project. (This is a program requirement.) Initial: _____



**Part 3. Engine Information**

<input type="checkbox"/> Main Engine ___ of ___		<input type="checkbox"/> Auxiliary Engine ___ of ___	
<b>Baseline (Existing) Engine Information</b>			
Fuel Type:		Engine Make:	
Engine Model:		Engine Year:	
Engine Serial No.:		Horsepower:	
Engine Displacement: Liters (ltr): _____ Cylinder (cyl): _____		Engine Family:	
Method proposed for rendering the replaced engine inoperable:			
<b>New Reduced-Emission Engine Information</b>			
Fuel Type:		Engine Make:	
Engine Model:		Engine Year:	
Engine Serial No.:		Horsepower:	
Engine Displacement: ltr: ___ cyl: _____		Engine Family:	
New Engine Cost (incl. tax): \$		New Eng. Installation/Labor Cost: \$	
<input type="checkbox"/> Main Engine ___ of ___		<input type="checkbox"/> Auxiliary Engine ___ of ___	
<b>Baseline (Existing) Engine Information</b>			
Fuel Type:		Engine Make:	
Engine Model:		Engine Year:	
Engine Serial No.:		Horsepower:	
Engine Displacement: ltr: ___ cyl: _____		Engine Family:	
Method proposed for rendering the replaced engine inoperable:			
<b>New Reduced-Emission Engine Information</b>			
Fuel Type:		Engine Make:	
Engine Model:		Engine Year:	
Engine Serial No.:		Horsepower:	
Engine Displacement: ltr: ___ cyl: _____		Engine Family:	
New Engine Cost (incl. tax): \$		New Eng. Installation/Labor Cost:\$	



**Part 3. Engine Information, cont'd.**

<input type="checkbox"/> Main Engine ___ of ___		<input type="checkbox"/> Auxiliary Engine ___ of ___	
<b>Baseline (Existing) Engine Information</b>			
Fuel Type:		Engine Make:	
Engine Model:		Engine Year:	
Engine Serial No.:		Horsepower:	
Engine Displacement:   Ltr: _____ Cylinder (cyl): _____		Engine Family:	
Method proposed for rendering the replaced engine inoperable:			
<b>New Reduced-Emission Engine Information</b>			
Fuel Type:		Engine Make:	
Engine Model:		Engine Year:	
Engine Serial No.:		Horsepower:	
Engine Displacement:   ltr: ___ cyl: _____		Engine Family:	
New Engine Cost (incl. tax): \$		New Eng. Installation/Labor Cost: \$	
<input type="checkbox"/> Main Engine ___ of ___		<input type="checkbox"/> Auxiliary Engine ___ of ___	
<b>Baseline (Existing) Engine Information</b>			
Fuel Type:		Engine Make:	
Engine Model:		Engine Year:	
Engine Serial No.:		Horsepower:	
Engine Displacement:   ltr: ___ cyl: _____		Engine Family:	
Method proposed for rendering the replaced engine inoperable:			
<b>New Reduced-Emission Engine Information</b>			
Fuel Type:		Engine Make:	
Engine Model:		Engine Year:	
Engine Serial No.:		Horsepower:	
Engine Displacement:   ltr: ___ cyl: _____		Engine Family:	
New Engine Cost (incl. tax): \$		New Eng. Installation/Labor Cost:\$	



**Part 3. Engine Information, cont'd.**

<input type="checkbox"/> Main Engine ___ of ___		<input type="checkbox"/> Auxiliary Engine ___ of ___	
<b>Baseline (Existing) Engine Information</b>			
Fuel Type:		Engine Make:	
Engine Model:		Engine Year:	
Engine Serial No.:		Horsepower:	
Engine Displacement: ltr: ___ cyl: _____		Engine Family:	
Method proposed for rendering the replaced engine inoperable:			
<b>New Reduced-Emission Engine Information</b>			
Fuel Type:		Engine Make:	
Engine Model:		Engine Year:	
Engine Serial No.:		Horsepower:	
Engine Displacement: ltr: ___ cyl: _____		Engine Family:	
New Engine Cost (incl. tax): \$		New Eng. Installation/Labor Cost:\$	
<input type="checkbox"/> Main Engine ___ of ___		<input type="checkbox"/> Auxiliary Engine ___ of ___	
<b>Baseline (Existing) Engine Information</b>			
Fuel Type:		Engine Make:	
Engine Model:		Engine Year:	
Engine Serial No.:		Horsepower:	
Engine Displacement: ltr: ___ cyl: _____		Engine Family:	
Method proposed for rendering the replaced engine inoperable:			
<b>New Reduced-Emission Engine Information</b>			
Fuel Type:		Engine Make:	
Engine Model:		Engine Year:	
Engine Serial No.:		Horsepower:	
Engine Displacement: ltr: ___ cyl: _____		Engine Family:	
New Engine Cost (incl. tax): \$		New Eng. Installation/Labor Cost:\$	



**Part 4. Funding Information**

Total Project Cost of All New Engines (incl. tax and labor): \$

**NOTE:** You **MUST** attach a written estimate or quotation from the equipment vendor documenting the cost of the new equipment. This quote must be obtained within 90 days prior to the closing date of the Program Announcement. The quote must indicate the certification level of the new, replacement engine (i.e., Tier 3 or cleaner).

Applicant Co-Funding Amount (if any): \$

Total Funding Requested (all engines): \$

New Engine Vendor/Installer Contact Information:



**FORM D-2: MARINE VESSELS – SHORE POWER**

If you have any questions regarding this program or the application process, please contact **Greg Ushijima** by phone at **(909) 396-3301** or by e-mail at: [gushijima@aqmd.gov](mailto:gushijima@aqmd.gov).

Please complete one form for each Shore Power project.

**Part 1. Project Information**

Company name/ Organization name/ Individual name:
Type of project (check all that apply): <input type="checkbox"/> Vessel retrofit to accept electrical power (“ <i>ship-side</i> ”) <input type="checkbox"/> Purchase of transformer and associated infrastructure (“ <i>shore-side</i> ”)
Type of applicant: <input type="checkbox"/> Terminal Operator <input type="checkbox"/> Vessel Owner <input type="checkbox"/> Port Authority <input type="checkbox"/> Other
Other potential project partners (if applicable):
Power supplier:
Where does the electrical power infrastructure begin and end?
Project Location: (Please include port, terminal, pier and berthing slip) If you are leasing the terminal, identify time left on the current lease:
Total number of vessels expected to use shore power at this location (per year):
Total number of annual vessel visits expected to use shore power:
Total number of annual hours of usage for vessels expecting to use shore power:



**Part 2: Vessel Information**

Complete Part 2 for each vessel to be retrofitted. For transformer only projects please provide a detailed description of the vessels that typically use this terminal.

If your vessel type is a refrigerated cargo ship, container-ship or passenger ship, please attach your Vessel Plan as required by the ARB shore power regulation:

<http://www.arb.ca.gov/ports/shorepower/shorepower.htm>

Vessel Type:	
Vessel Name:	Vessel Make:
Vessel Model:	Vessel Year:
US Coast Guard Documentation Number:	
Lloyds Register/IMO Ship ID Number:	
Vehicle Registration (CF) Number:	
Total Number of main and auxiliary engines on vessel:	
Main engine(s)	Auxiliary engine(s)
Total number of annual visits to the terminal:	
Average berthing time (hours) of the vessel, per visit (include time needed to connect and disconnect the vessel to shore power):	
Vessel power (kW) requirements while at berth:	
Average Power Requirement:	
Maximum Power Requirement:	

**Part 3. Current Berth Activity (Cumulative)**

Number of annual ship visits to the berth (attach the log of vessel visits for each of the specified years):
<input type="checkbox"/> 2012 _____
<input type="checkbox"/> 2013 _____
<input type="checkbox"/> 2014 _____





**Part 4. Predicted (Future) Berth Activity**

<p>Estimated annual ship visits using electrical power:</p> <p>2014-2016 _____</p> <p>2017-2019 _____</p> <p>2020 and beyond _____</p>
--

<p>Estimated monthly hours of operation:</p> <p>2014-2016 _____</p> <p>2017-2019 _____</p> <p>2020 and beyond _____</p>
---

<p>Estimated monthly megawatt (MW) usage:</p> <p>2014-2016 _____</p> <p>2017-2019 _____</p> <p>2020 and beyond _____</p>
--

**Part 5: Vessel Activity Information**

Attach a detailed description of the vessels that will be using the shore power equipment. Title this attachment “Part 5 – Vessel Activity Information”. This description should include:

- Vessel type
- Ship size (in 20-foot equivalent units (TEU) capacity)
- Number and type of engines
- Power demand (total auxiliary power (kW) – not hotelling load)
- This number of auxiliary engines typically operating while at berth per vessel
- Number of annual visits
- Average berthing time (hours) of the vessel, per visit (include time needed to connect and disconnect the vessel to shore power). Be sure to consider the maximum time the auxiliary engines are in use.



**Part 6: Funding Information**

You **MUST** attach a written estimate or quotation from the equipment vendor documenting the cost of the new equipment and associated labor. This quote must be obtained within 90 days prior to the closing date of the Program Announcement.

Transformer Project Cost: \$	Associated Infrastructure: \$
Retrofit Equip. Cost (incl. tax): \$	Retrofit Equip. Installation Cost: \$
<b>Total Project Cost:</b>	
<b>Total Amount Requested for this Project:</b> You <b><u>MUST</u></b> attach a detailed written estimate/quote from the equipment vendor for the cost of the equipment and labor.	
<input type="checkbox"/> Maximum allowable	Shore Power Transformer (“shore-side”): <b>50% of transformer &amp; other equipment between the vessel and transformer</b>  Shore Power Vessel Retrofit (“ship-side”): <b>100% of retrofit cost &amp; 50% of transformer cost</b>
<input type="checkbox"/> Other: \$	You may request less than the maximum allowable funding amount to improve cost-effectiveness of your project.
Anticipated Project Completion Date: <b>Please attach a proposed project schedule. Title this attachment “Part 8 – Project Schedule.”</b>	



### FORM E-1: LOCOMOTIVES

If you have any questions regarding this program or the application process, please contact **Connie Day** by phone at **(909) 396-3055** or by e-mail at: [cday@aqmd.gov](mailto:cday@aqmd.gov).

Please complete one Form E-1 for each piece of equipment. For multiple unit requests, you may download the Form E-1 multiple-unit spreadsheet from [www.aqmd.gov/Moyer](http://www.aqmd.gov/Moyer) in lieu of filling out multiple E-1 forms.

Which type of locomotive project is proposed with this application? (Check one)

- Locomotive Replacement (includes Tier 4 locomotives (or cleaner), GenSet locomotives (multi-engine switcher) and electric-hybrid locomotives. U.S.EPA considers a refurbished locomotive a new locomotive if it includes at least 75 % (by value) new parts.
- Idle limiting device (ILD)
- U.S. EPA certified engine remanufacture kit or repower/refurbishment
- ARB verified retrofit
- Head end power unit (HEP)

#### **Part 1: Locomotive Information**

Locomotive Type (Line Haul, Traditional Switcher, Alternative Technology Switcher, Passenger):	
Railroad Class:	
Proposed Project Life (same as contract term/how long you must operate equipment): _____ <b>years</b>	
Percent Operation in California (%): _____ Percent Operation in District (%): _____	
Has this equipment received previous CMP Funding? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Unit Number or Other Identifier:	Equipment Location Address:
Locomotive Make:	Locomotive Serial Number:
Locomotive Model:	Locomotive Model Year:
Does the locomotive already have a functioning idle limit device (ILD) installed? <input type="checkbox"/> Yes <input type="checkbox"/> No	



**Part 2: Existing (Baseline) Engine(s) Information**

Engine Type: <input type="checkbox"/> MAIN <b>-OR-</b> <input type="checkbox"/> AUXILIARY		# <u>    </u> of <u>    </u>
Fuel Type:	Baseline Engine Make:	
Baseline Engine Model:	Baseline Engine Year:	
Engine Serial No.:	Baseline Engine Horsepower:	
Baseline Engine Tier:	Baseline Engine Family:	
US EPA Certificate of Conformity No: <b>(attached)</b>	CARB Executive Order No: <b>(attached)</b>	
Engine Type: <input type="checkbox"/> MAIN <b>-OR-</b> <input type="checkbox"/> AUXILIARY		# <u>    </u> of <u>    </u>
Fuel Type:	Baseline Engine Make:	
Baseline Engine Model:	Baseline Engine Year:	
Engine Serial No.:	Baseline Engine Horsepower:	
Baseline Engine Tier:	Baseline Engine Family:	
US EPA Certificate of Conformity No: <b>(attached)</b>	CARB Executive Order No: <b>(attached)</b>	
Engine Type: <input type="checkbox"/> MAIN <b>-OR-</b> <input type="checkbox"/> AUXILIARY		# <u>    </u> of <u>    </u>
Fuel Type:	Baseline Engine Make:	
Baseline Engine Model:	Baseline Engine Year:	
Engine Serial No.:	Baseline Engine Horsepower:	
Baseline Engine Tier:	Baseline Engine Family:	
US EPA Certificate of Conformity No: <b>(attached)</b>	CARB Executive Order No: <b>(attached)</b>	
Engine Type: <input type="checkbox"/> MAIN <b>-OR-</b> <input type="checkbox"/> AUXILIARY		# <u>    </u> of <u>    </u>
Fuel Type:	Baseline Engine Make:	
Baseline Engine Model:	Baseline Engine Year:	
Engine Serial No.:	Baseline Engine Horsepower:	
Baseline Engine Tier:	Baseline Engine Family:	
US EPA Certificate of Conformity No: <b>(attached)</b>	CARB Executive Order No: <b>(attached)</b>	



**Part 3: Existing Locomotive Activity Information**

Annual Fuel Usage (gallons per year):	2012: _____
	2013: _____
	2014: _____
Attach documentation to support the reported gallons per year.	

**Complete each section(s) below that pertains to your Locomotive project type:**

**Part 4: New (Replacement) Locomotive Information**

Locomotive Type:	
<input type="checkbox"/> Tier 4 locomotive (or cleaner) <input type="checkbox"/> GenSet locomotive (multi-engine switcher) <input type="checkbox"/> Electric-hybrid locomotive	
NOTE: A refurbished locomotive is considered to be a new locomotive if it includes at least 75 percent (by value) new parts.	
Locomotive Serial Number (If available):	
Locomotive Make:	
Locomotive Model:	
Locomotive Model Year:	
Will the locomotive have a functioning idle limit device (ILD) installed?	<input type="checkbox"/> Yes <input type="checkbox"/> No



**Part 5: New/Replacement Engine(s) Information**

Engine Type: <input type="checkbox"/> MAIN <b>-OR-</b> <input type="checkbox"/> AUXILIARY		# <u>    </u> of <u>    </u>
Fuel Type:	Baseline Engine Make:	
Baseline Engine Model:	Baseline Engine Year:	
Engine Serial No.:	Baseline Engine Horsepower:	
Baseline Engine Tier:	Baseline Engine Family:	
US EPA Certificate of Conformity No: <b>(attached)</b>	CARB Executive Order No: <b>(attached)</b>	
US EPA Certified Emissions (g/bhp-hr):    NOx: _____    HC: _____    PM: _____		
Engine Type: <input type="checkbox"/> MAIN <b>-OR-</b> <input type="checkbox"/> AUXILIARY		# <u>    </u> of <u>    </u>
Fuel Type:	Baseline Engine Make:	
Baseline Engine Model:	Baseline Engine Year:	
Engine Serial No.:	Baseline Engine Horsepower:	
Baseline Engine Tier:	Baseline Engine Family:	
US EPA Certificate of Conformity No: <b>(attached)</b>	CARB Executive Order No: <b>(attached)</b>	
US EPA Certified Emissions (g/bhp-hr):    NOx: _____    HC: _____    PM: _____		
Engine Type: <input type="checkbox"/> MAIN <b>-OR-</b> <input type="checkbox"/> AUXILIARY		# <u>    </u> of <u>    </u>
Fuel Type:	Baseline Engine Make:	
Baseline Engine Model:	Baseline Engine Year:	
Engine Serial No.:	Baseline Engine Horsepower:	
Baseline Engine Tier:	Baseline Engine Family:	
US EPA Certificate of Conformity No: <b>(attached)</b>	CARB Executive Order No: <b>(attached)</b>	
US EPA Certified Emissions (g/bhp-hr):    NOx: _____    HC: _____    PM: _____		
Engine Type: <input type="checkbox"/> MAIN <b>-OR-</b> <input type="checkbox"/> AUXILIARY		# <u>    </u> of <u>    </u>
Fuel Type:	Baseline Engine Make:	
Baseline Engine Model:	Baseline Engine Year:	
Engine Serial No.:	Baseline Engine Horsepower:	
Baseline Engine Tier:	Baseline Engine Family:	
US EPA Certificate of Conformity No: <b>(attached)</b>	CARB Executive Order No: <b>(attached)</b>	
US EPA Certified Emissions (g/bhp-hr):    NOx: _____    HC: _____    PM: _____		



**Part 6: Future/Projected Locomotive Activity Information**

Annual Fuel Usage (gallons per year): \_\_\_\_\_

Contact the SCAQMD Staff Lead to discuss your project and appropriate assumptions for this projection.

**Part 7: Engine and/or Locomotive Cost**

All cost estimates must be based on quotes that have been obtained within 90 days prior to the closing date of the Program Application. Attach all quotes to the application.

New Locomotive Cost: \$	
Engine Unit Cost: \$	
Tax: \$	
Engine Installation Cost: \$	
Total Project Cost: \$	
Project Grant Request: \$	

**Part 8: Additional Project Information**

**Please provide a full description of the proposed project. Include an explanation of any project elements that are not adequately covered in the above Parts.**

(Attach additional sheets if more space is needed.)



## **Surplus Off-Road Opt-In for NOx (SOON)**

### **SCAQMD PROGRAM ANNOUNCEMENT #PA2015-08**

The South Coast Air Quality Management District (SCAQMD) is soliciting project proposals for the following purpose according to terms and conditions attached. In this Program Announcement (PA) the words “Proposer,” “Applicant,” “Contractor,” and “Consultant” are used interchangeably.

#### **SECTION I – OVERVIEW**

##### **PURPOSE**

The SCAQMD is seeking proposals for the Surplus Off-Road Opt-In for NOx (SOON) Provision of the California Air Resources Board’s (CARB’s) In-Use Off-Road Diesel Vehicle Regulation. The primary purpose of this program is to provide financial incentives to assist in the purchase of low-emission heavy-duty engine technologies to achieve near-term nitrogen oxides (NOx) emission reductions from in-use off-road equipment. Since funding for the SOON Program is from the Carl Moyer Program (CMP), all CMP requirements apply to this Program, except where specifically noted, or where the SCAQMD implements more stringent program criteria as described in the Rule 2449 SOON Implementation Guidelines.

##### **INTRODUCTION**

The SOON Program is designed to achieve additional NOx reductions above those that would be obtained from the State In-Use Off-Road Vehicle Regulation. These reductions are critical to meeting the PM<sub>2.5</sub> and ozone ambient air quality standards in the South Coast Air Basin.

Funding for Program Announcement #PA2015-08 is from state SB 1107 and AB 923 funds. Project awards are contingent upon receiving these funds from CARB. Additional sources of funding may become available and added to this Program.

Desirable projects must strive to meet a maximum cost-effectiveness limit of \$17,720 per ton of emissions reduced and any additional SCAQMD criteria as stated in this PA (the cost-effectiveness limit may be changed depending on the demand for program funds). Projects exceeding the cost-effectiveness limit may receive partial funding. Except where otherwise stated, projects must meet the requirements of the CMP program guidelines.

The current Program Announcement was prepared using the Approved Revision of the CMP Guidelines released on July 11, 2014. It is the applicant’s responsibility to ensure that the most current information and requirements are reflected in a submitted application. Applicants should check the CARB website for updates and advisories to the guidelines ([www.arb.ca.gov/msprog/moyer/moyer.htm](http://www.arb.ca.gov/msprog/moyer/moyer.htm)).

SCAQMD SOON requirements may sometimes be more stringent than CARB guidelines. For example, SCAQMD may have a lower cost-effectiveness ceiling for a particular



category. In case there are any conflicts between CARB guidelines and SCAQMD criteria, the more stringent criteria will prevail. SCAQMD will post any new information and requirements on its SOON web page at <http://www.aqmd.gov/home/programs/business/business-detail?title=off-road-diesel-engines&parent=vehicle-engine-upgrades>. It is the responsibility of the applicant to ensure that the most current information and requirements are reflected in a submitted application.

## **DEFINITIONS**

### **1. Alternative Fuel**

Alternative fuels include compressed natural gas (CNG), liquefied natural gas (LNG), methanol, ethanol, propane (LPG) and electric technologies.

### **2. Base Rule**

Base rule is defined as CARB's In-Use Off-Road Diesel regulation without the SOON provisions. Compliance with the Base Rule is required and is demonstrated by the DOORS Compliance Snapshot.

### **3. Compliance Plan**

Compliance plan is the future forecast of fleet average emissions using current fleet information and planned future repower, replacement, retirement and retrofit projects. An Excel spreadsheet template is available on the SCAQMD SOON webpage.

### **4. Contract Term**

Contract term is the duration for which the contract is valid. It encompasses both the project completion and project implementation periods.

- i. Project completion period is the first part of the Contract term starting from the date of Contract execution by both parties to the date the project post-inspection confirms that the project has become operational.
- ii. Project implementation period is the second part of the Contract term and equals the project life.

### **5. Cost-Effectiveness Limit**

The cost-effectiveness limit is the maximum funding that can be provided to an individual vehicle repower, replacement or retrofit project for each ton of covered emission reduced.

### **6. Current NOx Standard**

For all engine horsepower categories, the current NOx standard in 2015 is Tier 4 Final.

### **7. Dual-Fuel Technology**

Dual-fuel technology includes electric hybrids and technologies that utilize a combination of either CNG and diesel fuel or LNG and diesel fuel, provided they are certified by CARB. Experimental technologies and fuels will be referred to CARB for evaluation and possible eligibility in the program.

### **8. Incremental Cost**

Incremental cost is the percent of actual cost that is eligible for SOON funding. For repower projects, it is 85%; for replacement projects, it is 80%; and for retrofit projects,

it is 100%.

9. Project Life

Project life is the period of the contract term during which the repowered, replacement or retrofitted vehicle is operated and the contractor must report annual usage. It is used to calculate the cost effectiveness and funding amount for a particular project.

10. Replacement Project

Replacement project is the purchase of a new or used vehicle to replace an existing vehicle.

11. Repower Project

Repower project is the replacement of an old engine of an existing vehicle with a newer engine certified to lower emission standards.

12. Retrofit Project

Retrofit project is a modification made to an engine exhaust and/or fuel system such that the specifications of the retrofitted engine are different from the original engine.

### **GENERAL PROGRAM INFORMATION**

The primary focus of the SOON Program is to achieve emission reductions from heavy-duty vehicles and equipment operating in California as early and as cost-effectively as possible. The SOON Program is intended to achieve additional NO<sub>x</sub> reductions which are needed to meet the PM<sub>2.5</sub> and ozone ambient air quality standards in the South Coast Air Basin. The emission reductions expected through the deployment of low-emission engines or retrofit technologies under this Program must be real, surplus and quantifiable. To avoid double counting of emission reductions, project vehicles and/or equipment may not receive funding from any other government grant program that is designed to reduce mobile source emissions. Specifically, these programs include, but are not limited to:

- All Mobile Source Air Pollution Reduction Review Committee (MSRC) Programs
- All CARB Emission Reduction Credit Programs
- SCAQMD Rule 2202 Air Quality Investment Program
- SCAQMD RECLAIM Air Quality Investment Program for NO<sub>x</sub>
- Emission Credit Programs encompassed in the SCAQMD Rule 1600-series and 1309.1
- 1B Bond Program
- AB 118 Funding Program

Replacement and repower projects are **limited to only** those involving diesel-to-alternative fuel, diesel-to-dual fuel technology, and diesel-to-diesel fuel engines or vehicles. **All projects must meet the program's cost-effectiveness limits and be operational no later than May 31, 2017.** No administrative or vehicle operational costs are eligible.

It is expected that multiple awards will be granted under this PA, subject to the approval of the SCAQMD Governing Board.

All proposals will be evaluated based on criteria set forth in this PA. The SCAQMD will evaluate and/or verify information submitted by the applicant. At SCAQMD's discretion, consultants to the SCAQMD may conduct all or part of such evaluation and/or verification. Data verification during the evaluation and contracting process may cause initial cost-effectiveness rankings, and associated awards, to change. Furthermore, the SCAQMD reserves the right to make adjustments to awards based on the subsequent verification of information as well as changes in cost-effectiveness.

### IMPORTANT PROGRAM INFORMATION

- Fleets with a total statewide equipment horsepower over 20,000 hp and with 40 percent or more of their vehicles at Tier 0 and Tier 1 emission levels as of January 1, 2008, are subject to the SOON Program and are required to apply for funding. Fleets not meeting both of the above criteria on January 1, 2008, may voluntarily participate in this program and apply for funding.
- For this program cycle, all projects will be eligible for a maximum seven year operational requirement within the South Coast Air District. Shorter project life will be considered on a case-by-case basis and may be required by the CMP Guidelines. However, a shorter project life may affect the project's ranking relative to other project applicants and the amount of funding that can be provided.
- The annual hours used to calculate cost-effectiveness will be included in the contract. An extension of the contract or partial payback of funds may be required if the proposed annual hours are not achieved.
- For all repower projects, fleets are **not** required to but may install the highest level verified diesel emission control system (VDECS) at their own cost.
- Retrofit projects which can achieve NOx reductions may be funded on a case-by-case basis.
- Replacement, repowers or NOx retrofits projects funded under SOON are ineligible for compliance with the base rule until the end of the contract period.
- Applicants **must** provide vendor quotes with their application to document the cost of implementing the proposed technology. **All quotes must have been obtained within 90 days of application submittal. Applicants may be required to submit quotes from more than one technology provider.**
- Applicants must demonstrate that they are in full compliance with all CARB applicable regulations and that vehicle/equipment funding requests under this Program provide surplus emissions reductions. **Applicants are required to submit a compliance plan showing how they will comply with the targets of CARB's In-Use Off-Road Vehicle regulation throughout the contract term, as well as how the new projects under this PA will meet SOON NOx targets in 2017 and 2020.**
- Applicants must ensure that the vehicle/equipment to be purchased or installed is in compliance with all applicable federal, state and local air quality rules and regulations and that it will maintain compliance for the full contract term.
- Any associated tax obligation with the award is the responsibility of the grantee.
- No third-party contracts will be executed.

- Pre- and post-inspection of all vehicles/engines/equipment approved for funding will be conducted by SCAQMD.
- Destruction of the engine/equipment being replaced is required.
- To avoid double dipping, applicants shall not apply for funding of the same equipment in any other air district.

## **POTENTIAL PROJECTS**

All eligible projects must use certified technology or technology that has been verified by CARB for real and quantifiable emission reductions that go beyond any regulatory requirement. The following projects are eligible for SOON funding:

### Repower Project

For a repower project, the new engine must be certified for sale in California to the current NOx emission standard. If an engine meeting the current emission standard is not available or cannot be installed:

- A Tier 3 Replacement or Tier 4 Interim Engine rated at 175 hp or higher can be used for the repower project.
- A Tier 3 Replacement or Tier 4 Interim Engine rated at 175 horsepower or less can be used for repower projects provided it complies with U.S. Environmental Protection Agency (EPA) requirements related to replacing in-use engines contained in the Code of Federal Regulations, Title 40, Section 1068.240.
- For off-road equipment with similar modes of operation to on-road vehicles, other possible options include the replacement of an older diesel off-road engine with a new on-road engine certified to an emission standard equal to or cleaner than the Tier 4 Final off-road emission standard or a newer emission certified alternative fuel engine.

### Retrofit Project

For a retrofit project, the retrofit technology must be:

- Verified by CARB to reduce NOx or NOx plus PM for the specific engine for which funding is requested.
- In compliance with established durability and warranty requirements and cost effectiveness criteria.

Diesel Particulate Filters (DPFs) and other devices that are not verified to reduce NOx are not eligible for SOON funding. The applicant will find more information on VDECS, including a list of currently verified DECS at <http://www.arb.ca.gov/diesel/verdev/verdev.htm>.

### Replacement Project

For replacement projects, the replacement vehicle/equipment must be powered by a Tier 4 Final engine. If a vehicle/equipment with a Tier 4 Final engine will not be available within 6 months of the application submittal, vehicle/equipment with an Interim Tier 4 or Tier 3 engine may be purchased.

## PROJECT CRITERIA

The SCAQMD retains the authority to impose more stringent additional requirements in order to address local concerns.

- Off-road CI equipment eligible for SOON Program funding includes equipment 25 hp (19 kilowatt) or greater. The complete definition can be found in CARB's In-Use Off-Road Diesel regulation at <http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm>.
- SOON Program grants can be no greater than a project's incremental cost (85% of quotation for repower projects, 80% of quotation for replacement projects). The incremental cost shall be reduced by the value of any current financial incentive that reduces the project price, including but not limited to tax credits or deductions, grants, or other public financial assistance.
- Applicants must ensure that the vehicle/equipment to be purchased or installed is in compliance with all applicable federal, state and local air quality rules and regulations and that it will maintain compliance for the full contract term.
- The certification emission standard and Tier designation for the engine must be determined from the CARB's Executive Order issued for that engine, not by the engine model year. Executive orders for off-road engines may be found at <http://www.arb.ca.gov/msprog/offroad/cert/cert.php>.
- Reduced-emission engines or retrofits must be certified/verified for sale in California and must comply with durability and warranty requirements. These may include new CARB certified engines and verified diesel emission control strategies.
- New vehicles equipped with Tier 4 family emission limits (FEL) engines certified to Tier 3 or Interim Tier 4 standards are eligible for SOON Program funding. **However, those engines will have their cost effectiveness calculated as though they were Tier 3 engines.**
- Equipment manufactured under the "Flexibility Provisions for Equipment Manufacturers", as detailed in Title 13, CCR, section 2423(d), are eligible for SOON Program funding provided their engines are certified to Tier 3 or Interim Tier 4 standards.
- Class 7 diesel forklifts are the only diesel forklifts eligible for SOON Program funding and are subject to all off-road project criteria. The SCAQMD must obtain and verify documentation of the classification of the forklift prior to funding.
- If repower with an engine meeting the current applicable standard is technically infeasible, unsafe or cost prohibitive, the replacement engine must meet the most current practicable previously applicable emission standard and cost-effectiveness criteria and, if rated at less than 175 hp, must comply with the requirements related to replacing in-use engines contained in Title 40, Code of Federal Regulations, Section 1068.240.
- Replacement of an uncontrolled diesel off-road engine with a new on-road engine certified to an emission standard equal to or lower than the Tier 4 Final off-road emission standard or a newer emission-certified alternative-fuel engine may be eligible for funding as off-road equipment with similar modes of operation as on-road vehicles on a case-by-case basis. Other equipment may be eligible for funding on a case-by-case basis. These repowers must meet all other applicable project criteria.

- Applicants must provide their DOORS Fleet Compliance Snapshot.
- Applicants must provide the DOORS EIN for each vehicle for which funding is requested.
- Applicants must provide proof of ownership for each vehicle for which funding is requested for a replacement vehicle.
- Applicants must provide a current Compliance Plan using the SCAQMD fleet calculator or the DOORS calculator demonstrating compliance with the Off-Road regulation throughout the anticipated contract period.
- Applicants must provide at least the most recent two (2) years of usage information, preferably hour-meter readings.

Potential projects that fall outside of these criteria may be considered on a case-by-case basis if evidence provided to the air district suggests potential surplus, real, quantifiable and enforceable emission reduction benefits.

### **MAXIMUM ELIGIBLE FUNDING**

The maximum eligible funding amount and project life for each SOON project type is summarized below.

Project	Maximum Funding	Maximum Project Life
Replacement	80% of vehicle/equipment cost	Five years, except: <ul style="list-style-type: none"> <li>• Three years for excavators, skid steer loaders, and rough terrain forklifts</li> <li>• Seven years crawler tractors, off-road tractors, rubber tired dozers, and workover rigs.</li> <li>• Ten years for all off-road farm equipment</li> </ul>
Repower	85% of engine cost plus parts and labor necessary for installation	Seven years
Retrofit	100% of retrofit device cost plus parts and labor for installation, plus estimated cost for maintenance during project life.	Five years

### **COST-EFFECTIVENESS EVALUATION DISCUSSION**

The SOON Program is required to meet the requirements of the CMP by using the cost-effectiveness calculations methodology found in Appendix C of the CMP Guidelines (see <http://www.arb.ca.gov/msprog/moyer/guidelines/current.htm>).

### **REPORTING AND MONITORING**

All participants in the SOON Program are required to keep appropriate records during the full contract period. Project life is the number of years used to determine the cost-

effectiveness and is equivalent to the contract life. All equipment must operate in the SCAQMD for this full project life. The SCAQMD shall conduct periodic reviews of each project’s operating records to ensure that the engine is operated as stated in the program application. Annual records must contain the following, at a minimum:

- Total Hours of Operation
- Total Hours of Operation in the South Coast Air District
- Annual Fuel Consumed (if cost-effectiveness was determined on fuel basis)
- Annual Maintenance and Repair Information

Records must be retained and updated throughout the project life and made available for SCAQMD inspection. The SCAQMD may conduct periodic reviews of each vehicle/equipment project’s operating records to ensure that the vehicle is operated as required by the project requirements.

**PROGRAM ADMINISTRATION**

The SOON Program will be administered locally by the SCAQMD through the Science and Technology Advancement Office.

**FUNDING CATEGORIES**

Only equipment identified in the CARB In-Use Off-Road Diesel Vehicle regulation is eligible for this Program.

**PROJECT EVALUATION/AWARDS**

SCAQMD staff will evaluate all submitted proposals and make recommendations to the SCAQMD Governing Board for final selection of project(s) to be funded. Proposals will be evaluated on the cost-effectiveness of emissions reduced on a vehicle/equipment-by-vehicle/equipment basis, as well as a project’s disproportional impact evaluation. (This is discussed further in Section IV).

**SCHEDULE OF EVENTS**

Release of #PA2015-08	March 6, 2015
All Applications due by 1:00 p.m.	Wednesday, June 3, 2015
Anticipated Award Consideration by SCAQMD Board	October 2, 2015

**ALL PROPOSALS MUST BE RECEIVED AT THE SCAQMD HEADQUARTERS  
NO LATER THAN 1:00 P.M. ON WEDNESDAY, JUNE 3, 2015**

**Postmarks will not be accepted. Faxed or email proposals will not be accepted. Proposers may hand-deliver proposals to the SCAQMD by submitting the proposal to the SCAQMD Public Information Center. The proposal will be date and time-stamped and the person delivering the proposal will be given a receipt.**

**SCAQMD may issue subsequent solicitations if insufficient applications are received in the initial solicitation.**

**STATEMENT OF COMPLIANCE**

Government Code Section 12990 and California Administrative Code, Title II, Division 4, Chapter 5, require employers to agree not to unlawfully discriminate against any employee or applicant because of race, religion, color, national origin, ancestry, physical handicap, medical condition, marital status, sex, or age. A statement of compliance with this clause is included in all SCAQMD contracts.

**SECTION II: WORK STATEMENT/SCHEDULE OF DELIVERABLES**

All applicants that are selected for funding awards must complete the Work Statement and Schedule of Deliverables described below as part of the contracting process. Development of these materials for the initial application is NOT required; however, applicants must sign the application form indicating their understanding of the requirements for submittal of additional project information to finalize a contract and that all vehicles, engines or equipment must be in operation no later than **May 31, 2017**.

**WORK STATEMENT**

The scope of work involves a series of tasks and deliverables that demonstrate compliance with the requirements of the SOON Program as administered by CARB and the SCAQMD. The project applicant is responsible for developing detailed project plans that address the program criteria. In addition, alternative fuel project applicants must discuss their plan for refueling the proposed vehicles/equipment, and if appropriate, should provide a letter of agreement from their fuel provider.

At a minimum, any contract for funding the proposed project must meet the following criteria:

- Emission reductions must be real, quantifiable, enforceable and surplus in accordance with CARB and SCAQMD guidelines.
- Cost-effectiveness of the project must meet the minimum requirement of the Carl Moyer guidelines.
- Project engines or equipment must operate in-service for the full project life.
- All vehicles/engines/equipment must be in operation no later than May 31, 2017.
- Appropriate annual usage records must be kept and reported to SCAQMD during the project life (i.e., annual hours of operation).
- A compliance plan that demonstrates compliance with the off-road regulation throughout the contract period must be provided.
- Ensure that the project complies with other local, state and federal programs, and resulting emission reductions from a specific project are not required as a mitigation measure to reduce adverse environmental impacts that are identified in an environmental document prepared in accordance with the California Environmental Quality Act or the National Environmental Policy Act.



- If requested, a contractor must provide a financial statement and bank reference, or other evidence of financial ability to fulfill contract requirements.

## **DELIVERABLES**

The contract will describe how the project will be monitored and what type of information will be included in project progress reports. At a minimum, the SCAQMD expects to receive the following reports:

1. Quarterly status reports until the vehicle(s) or equipment purchase(s), repower(s), or retrofit(s) has been completed and the vehicle(s) is operational. These reports shall include a discussion of any problems encountered and how they were resolved, any changes in the schedule, and recommendations for completion of the project. These progress reports are required before payment for the purchase, repower or retrofit will be made.
2. An annual report, throughout the project life, which provides the annual hours of operation, where the vehicle(s) or equipment(s) was operated, annual fuel consumption, and operational and maintenance issues encountered and how they were resolved. SCAQMD reserves the right to verify the information provided.

## **SECTION III: PROPOSAL SUBMITTAL REQUIREMENTS**

Proposers **must** complete the appropriate application forms committing that the information requested in Section II, Work Statement/Schedule of Deliverables will be submitted if the Proposer's project is selected for funding.

In addition, Conflict of Interest and Project Cost information, as described below, must also be submitted with the application. It is the responsibility of the proposer to ensure that all information submitted is accurate and complete.

### **CONFLICT OF INTEREST**

Applicant must address any potential conflicts of interest with other clients affected by actions performed by the firm on behalf of the SCAQMD. Although the proposer will not be automatically disqualified by reason of work performed for such firms, the SCAQMD reserves the right to consider the nature and extent of such work in evaluating the proposal. Conflicts of interest will be screened on a case-by-case basis by the SCAQMD District Counsel's Office. Conflict of interest provisions of the state law, including the Political Reform Act, may apply to work performed pursuant to this contract. Please discuss potential conflicts of interest on the application form entitled "Campaign Contributions Disclosure".

### **PROJECT COST**

Applicants must provide cost information that specifies the amount of funding requested and the basis for that request by attaching vendor quotes to the application. Applicants need to inform vendors of the time frame of the award process so that they can accurately quote costs based on the anticipated order/purchase date. **Note that no purchase orders may be placed or work performed for projects awarded under this PA until after the date of award approval by the SCAQMD Governing Board. Any orders placed or**

**payments made in advance of an executed contract with the SCAQMD are done at the risk of the applicant. The SCAQMD has no obligation to fund the project until a contract is fully executed by both parties.**

**The SOON Program funds only the differential cost between existing technology and low-emission technology.** The proposed low-emission technology must be CARB-certified in most cases.<sup>1</sup> Proposals will be ranked by cost-effectiveness on a vehicle/equipment-by-vehicle/equipment basis. The cost-effectiveness limit has been established at \$17,720/ton of emissions reduced. The cost-effectiveness may be changed depending on the demand for program funds. No fueling infrastructure, administrative or operational costs will be funded.

All project costs must be clearly indicated in the application. In addition, applicants must include any sources of co-funding and the amount of each co-funding source in the application. **Applicants are cautioned that the project life period used in calculating emissions reductions will be used to determine the length of their data reporting obligation and the length of their contract. In other words, a project applicant using a seven year life for the emissions reduction calculations will be required to operate and track activity for the project vehicle for the full seven years.** A seven year life (shorter project life will be considered on a case-by-case basis and may be required for replacement projects) will be used for all projects subject to #PA2015-08.

## **PROPOSAL SUBMISSION**

All proposals must be submitted according to specifications set forth herein.

### Application Forms

Program application forms are provided after this document. These must be completed and submitted with other required documents (i.e., Certifications and Representations and vendor quotations) discussed in the application and below.

### Certifications and Representations

Contained in Form A-1 of this PA are five forms which must also be completed and submitted with the application.

### Compliance Plan

Projects funded by SOON monies must result in emission reductions that are surplus to those that would be realized by fleets complying with the base rule. Fleets are required to submit a compliance plan in electronic format to demonstrate how they comply with both the base rule as well as the SOON provision of the rule. Fleet owners, at a minimum, must provide the following information for each year, 2010 through 2022 inclusive:

- A vehicle list which includes, but is not limited to, vehicle type, manufacturer, model, model year, and whether the equipment is included in the base or SOON fleet for each piece of equipment in the fleet.
- Information including, but not limited to, calculations, fleet information, etc., showing compliance with the base rule fleet target levels or compliance with the BACT

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<sup>1</sup> Note that non-CARB certified engines/devices requiring an experimental permit from CARB may be considered, but the project will require special CARB approval.

turnover and retrofit requirements. Either the CARB DOORS calculator (if it projects future years) or the Excel SOON fleet calculator may be used.

- Information including, but not limited to, calculations, fleet information, etc., showing whether the vehicles funded by the SOON program are in compliance with the SOON NOx fleet average target levels.

SOON Compliance Plan documents and the Microsoft Excel SOON fleet calculator can be downloaded at the SCAQMD SOON website:

<http://www.aqmd.gov/home/programs/business/business-detail?title=off-road-diesel-engines&parent=vehicle-engine-upgrades>

### Due Date

The proposer shall submit **four (4) complete paper copies of the application and an electronic copy (CD or flash drive) of the compliance plan and completed application** in a sealed envelope, plainly marked in the upper left-hand corner with the name and address of the proposer and the words "**Program Announcement #PA2015-08**". Paper applications shall be submitted in an eco-friendly format: stapled, not bound, black and white print; no three-ring, spiral or plastic binders, and no card stock or colored paper. All proposals must be received no later than **1:00 p.m., on Wednesday, June 3, 2015**. Postmarks are not accepted as proof of deadline compliance. **Faxed or emailed proposals will not be accepted.** Proposals must be directed to:

Procurement Unit  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765

**Any correction or resubmission done by the proposer will not extend the submittal due date.**

### Grounds for Rejection

A proposal may be immediately rejected if:

1. It is not prepared in the format described.
2. It is not signed by an individual authorized to represent the firm.
3. Does not include current cost quotes, Contractor Statement Forms, and other forms required in this PA.

### Disposition of Proposals

The SCAQMD reserves the right to reject any or all proposals. All responses become the property of the SCAQMD. One copy of the proposal shall be retained for SCAQMD files. Additional copies and materials will be returned only if requested and at the proposer's expense.

### Modification or Withdrawal

Once submitted, proposals cannot be altered without the prior written consent of SCAQMD. All proposals shall constitute firm offers and may not be withdrawn for a period of ninety (90) days following the last day to accept proposals.

## **SECTION IV: PROPOSAL EVALUATION/CONTRACTOR SELECTION CRITERIA**

SCAQMD staff will evaluate all submitted proposals and make recommendations to the SCAQMD Governing Board for final selection of project(s) to be funded. Proposals will be evaluated based on the cost-effectiveness of emissions reduced on a vehicle/equipment-by-vehicle/equipment basis. Be aware that there is a possibility that due to program priorities, cost-effectiveness and/or funding limitations, project applicants may be offered only partial funding, and not all proposals that meet minimum cost-effectiveness criteria may be funded.

Funding will be awarded based on the cost-effectiveness of each piece of equipment. Distribution will be as follows:

1. 75% of total project funding will be awarded to the most cost-effective projects. No individual company shall receive more than 10% of this portion of the funding.
2. The remaining 25% of funding will be distributed so that at least one piece of equipment per applicant is funded, until funding is expended. If funds are still remaining after this distribution, they will be distributed according to cost-effectiveness.

In addition, at least 50 percent of the CMP funds must be spent in areas that are most significantly impacted by air pollution and are low income or communities of color, or both (i.e., receive a disproportionate impact from these factors). CARB issued broad goals and left the details of how to implement this requirement to each air agency. SCAQMD uses the following method to meet these requirements.

1. All projects must qualify for the CMP by meeting the cost-effectiveness limit of \$17,720 per ton of emissions controlled.
2. All projects will be evaluated according to the following criteria to qualify for disproportionate impact funding:
  - a. Poverty Level: All projects in areas where at least 10 percent of the population falls below the Federal poverty level, based on the year 2000 census data, will be eligible to be included in this category
  - b. PM Exposure: All projects in areas with the highest 15 percent of PM concentration will be eligible to be ranked in this category. The highest 15 percent of PM concentration is 46 micrograms per cubic meter and above, on an annual average
  - c. Toxic Exposure: All projects in areas with a cancer risk of 1,000 in a million and above (based on MATES II estimates) will be eligible to be ranked in this category.
3. Fifty percent of the available funding from this PA will be allocated among proposals located in disproportionately impacted areas. If available funding is not exhausted with the outlined methodology, then staff will return to the SCAQMD Governing Board for direction. If, on the other hand, funding requests exceed the available funding levels, then all qualified projects will be ranked for poverty level, PM and toxic exposures. The maximum score will be comprised of 40 percent for poverty level and 30 percent each for PM and toxic exposures

4. All the proposals not awarded under the 50 percent disproportional impact funding will then be ranked according to cost-effectiveness, with the most cost-effective project funded first and then in descending order for each funding category until the remainder of the CMP funds are exhausted.

#### **SECTION V: PAYMENT TERMS**

For all projects, payment will be made upon installation and commencement of operation of the funded equipment for 85% of the submitted repower invoice (80% of the submitted replacement invoice) or the contract maximum amount, whichever is less.

#### **CONTACT FOR ADDITIONAL INFORMATION**

Questions regarding the content or intent of this PA, procedural matters, sample contract, the compliance plan worksheet, or locations of workshops can be found at the SOON website (<http://www.aqmd.gov/home/programs/business/business-detail?title=off-road-diesel-engines&parent=vehicle-engine-upgrades>), or can be addressed to:

Adewale Oshinuga  
Science and Technology Advancement  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765  
Phone: (909) 396-2599/Fax: (909) 396-3324

**The remainder of this page is left intentionally blank.**

# Application Forms

## **FORM A-1 - GENERAL PROJECT INFORMATION APPLICATION**

All Sections of Form A-1 must be submitted for an application to be deemed complete. If information does not pertain to your project, please write "NA" on the form and sign it. In addition, supplemental forms are required for each piece of requested equipment.

### **I. APPLICANT INFORMATION**

Company name/ Organization name/ Individual name:		
Business address (Mailing address): Street:		
City:	State:	Zip code:
Contact name and title:		
E-mail:		
Phone: (     )     )		Fax: (     )     )
Person with contract signing authority (if different from above):		

**I hereby certify that all information provided in this application and any attachments are true and correct.**

Printed Name of Responsible Party:	Title:
Signature of Responsible Party:	Date:

**Complete this section if application was prepared by another person**

**I have completed the application, in whole or in part, on behalf of the applicant.**

Printed Name:	Title:
Signature:	Date:
Amount Being Paid for Application Completion in Whole or Part:	Source of funding to 3rd party:

### **II. FUNDING INFORMATION**

<b>Total</b> Number of Equipment Included in Project:	
<b>Total</b> Number of Engines Included in Project:	
<b>Total</b> Amount of Funding Requested: \$	<b>Total</b> Applicant Co-Funding Amount (if any): \$

### III. GENERAL PROJECT INFORMATION

There are three types of emission reduction projects:

**New Purchase** - Purchasing a new vehicle or piece of equipment with an engine that is cleaner than the current year standard.

**Repower** - Replacing an existing engine with a new reduced-emission engine.

**Retrofit** – Installing an ARB-verified emission control system on an in-use engine.

**IMPORTANT REMINDER:** Only projects that are demonstrated to be surplus to California Air Resources Board (ARB) regulations are eligible for CMP (CMP) funding. Please ensure your proposed project is eligible prior to submitting an application.

Check the appropriate box(es) below for each type of project and indicate the total number of equipment/engines included in your project.

#### **B. Off-Road Diesel - SOON**

**(Please Circle Fleet Size)**

Diesel Fleet Size (Total hp): **Small**  $\leq$  2,500    **Medium** 2,501-5,000    **Large**  $>$  5,000

**Equipment Replacement** – Total pieces of equipment: \_\_\_\_\_

A supplemental application (Form B-1) must be completed for each piece of new equipment

**Repower Only**– Total engines to be repowered: \_\_\_\_\_

A supplemental application (Form B-2) must be completed for each engine repower

**Repower with NOx Retrofit** – Total engines to be repowered/retrofit: \_\_\_\_\_

A supplemental application (Form B-2) must be completed for each engine repower

**NOx Retrofit Only** – Total engines to be retrofit: \_\_\_\_\_

A supplemental application (Form B-3) must be completed for each retrofit



#### IV. FUNDING DISCLOSURE

Have any engines or vehicles listed in this application been awarded funding from the Air Resources Board or another public agency or are any being considered for funding?

- Yes  
 No

If "yes", complete the following for each engine or vehicle:

Agency applied to:
Date/Number of Agency Solicitation:
Total Funding Amount Requested or Awarded: \$
Amount per Unit Requested or Awarded: \$
Status:
Do you plan to claim a tax credit or deduction for the project vehicle? <input type="checkbox"/> Yes <input type="checkbox"/> No  If "yes", please indicate the estimated tax credit amount to be claimed per vehicle: _____.

## **Application Statement – Please Read and Sign**

All information provided in this application will be used by SCAQMD staff to evaluate the eligibility of this application to receive program funds. SCAQMD staff reserves the right to request additional information and can deny the application if such requested information is not provided by the requested deadline. Incomplete or illegible applications will be returned to applicant or vendor, without evaluation. An incomplete application is an application that is missing information critical to the evaluation of the project.

- ◆ I certify to the best of my knowledge that the information contained in this application is true and accurate.
- ◆ I understand that all vehicles/equipment, both existing and new, must be made available within the SCAQMD boundaries for inspection, unless otherwise approved by SCAQMD's Project Officer.
- ◆ I understand that, if awarded funding under the CMP, development and submittal of a detailed work statement, with deliverables and schedule is a requirement of the contracting process.
- ◆ I understand that it is my responsibility to ensure that all technologies are either verified or certified by the California Air Resources Board (CARB) to reduce NOx and/or PM pollutants. CARB Verification Letters and/or Executive Orders are attached, as applicable.
- ◆ I understand that it is my responsibility to ensure that the vehicle/equipment to be purchased or installed is in compliance with all applicable federal, state, and local air quality rules and regulations and that it will maintain compliance for the full Contract term.
- ◆ I understand that off-road equipment applicants subject to CARB's In-Use Off-Road Diesel Vehicle Regulation (Off-Road Regulation must submit information regarding fleet size and compliance status. This must include the Diesel Off-Road On-line Reporting System (DOORS) ID of the fleet and the DOORS Equipment Identification Number (EIN) of the funded equipment. All documentation submitted must be signed and dated by the applicant and include language certifying that the fleet list provided is accurate and complete.
- ◆ I understand that for SOON repower projects, I am **not** required to install the highest level available verified diesel emission control device (VDECS).
- ◆ I understand that there may be conditions placed upon receiving a grant and agree to refund the grant (or pro-rated portion thereof) if it is found that at any time I do not meet those conditions and if directed by the SCAQMD in accordance with the contract agreement.
- ◆ I understand that, for this equipment, I will be prohibited from applying for any other form of emission reduction credits for Moyer-funded vehicles/engines, including: Emission Reduction Credit (ERC); Mobile Source Emission Reduction Credit (MSERC) and/or Certificate of Advanced Placement (CAP), for all time, from the SCAQMD, CARB or any other Air Quality Management or Air Pollution Control District.
- ◆ The proposed project has not been funded and is not being considered for CMP funds by another air district, CARB, or any other public agency.

- ◆ In the event that the vehicle(s)/equipment do not complete the minimum term of any agreement eventually reached from this application, I agree to ensure the equivalent project emissions reductions, or to return grant funds to the SCAQMD as required by the contract.
- ◆ I have the legal authority to apply for grant funding for the entity described in this application.
- ◆ Disclosure of that value of any current financial incentive that directly reduces the project price, including tax credits or deductions, grants, or other public financial assistance for the same engine is required. To avoid double counting of incentives, all tax credits or deductions, grants, or other public financial assistance must be deducted from the CMP request. I understand that third party contracts are not permitted. A third party may, however complete an application on an owner's behalf. Third parties are required to list how much compensation, if any, they are receiving to prepare the application(s), and to certify that no CMP funds are being used for this compensation. (see below)
- ◆ I understand that additional project information must be submitted to finalize a contract. This information may be found under Section II: Work Statements/Schedule of Deliverables in the PA.
- ◆ I understand that all vehicles, engines or equipment funded by this program must be operational within eighteen (18) months of contract execution, or by May 31, 2017, whichever is earlier.
- ◆ **I have initialed this bullet to indicate** that there are no potential conflicts of interest with other clients affected by actions performed by the firm on behalf of the SCAQMD. **If this bullet is not initialed, I have attached a description to this application of the potential conflict of interest**, which will be screened on a case-by-case basis by the SCAQMD District Counsel's Office. There is no potential conflict of interest: \_\_\_\_\_ **(Please initial if applicable, otherwise attach separate sheet describing the potential conflict.)**

\_\_\_\_\_  
Applicant's Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Applicant's Name (please print)

\_\_\_\_\_  
Title

**Please initial each section.**

(See #PA2015-08 for additional information and requirements.):

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The purchase of this low-emission technology is NOT required by any other local, state, and/or federal rule or regulation.

---

The definitions of qualifying projects are described in #PA2015-08. These definitions have been reviewed and this application is consistent with those definitions.

---

The vehicle/engine will be used within the SCAQMD boundaries (with the emission reduction system operating) for at least the projected usage shown in this application, and no less than 75 percent of the time.

---

All project applicants must submit documentation that supports the activity claimed in the application (i.e., fuel receipts, mileage logs and/or hour-meter readings covering the last two years). This documentation is attached.

---

The grant contract language cannot be modified without the written consent of all parties. I have reviewed and accepted the sample contract language.

---

I understand that an IRS Form 1099 may be issued to me for incentive funds received under the Moyer Program. I understand that it is my responsibility to determine the tax liability associated with participating in the Moyer Program.

---

I understand that a SCAQMD-funded Global Positioning System (GPS) unit may be installed on vehicles/equipment not operating within SCAQMD boundaries full time. I will submit data as requested and otherwise cooperate with all data reporting requirements. I also understand that the additional cost of the GPS unit will be added to the project cost when calculating cost-effectiveness, though the SCAQMD will pay for this system directly.

---

I understand that the SCAQMD has the right to conduct unannounced inspections for the full project life to ensure the project equipment is fully operational at the activity level committed to by the contract.

---

I understand that all emission reductions resulting from funded projects will be retired. To avoid double counting of emission reductions, project vehicles and/or equipment may not receive funding from any other government grant program that is designed to reduce mobile source emissions.

---

I understand that a tamper proof, non-resettable digital hour meter/odometer must be installed on all vehicles/equipment and that the digital hour meter/odometer will record the hours/miles accumulated within the SCAQMD boundaries. This cost is my responsibility.

---

I understand that any tax credits claimed must be deducted from the CMP request. Please check one:

I do not plan to claim a tax credit or deduction for costs funded by the CMP.

I do plan to claim a tax credit or deduction for costs funded by the CMP.  
If so, please indicate amount here: \$ \_\_\_\_\_

I plan to claim a tax credit or deduction only for the portion of incremental costs not funded by the CMP. If so, please indicate amount here: \$ \_\_\_\_\_

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# South Coast Air Quality Management District

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

## **Business Information Request**

Dear SCAQMD Contractor/Supplier:

The South Coast Air Quality Management District (SCAQMD) is committed to ensuring that our contractor/supplier records are current and accurate. If your firm is selected for award of a purchase order or contract, it is imperative that the information requested herein be supplied in a timely manner to facilitate payment of invoices. In order to process your payments, we need the enclosed information regarding your account. **Please review and complete the information identified on the following pages, complete the enclosed W-9 form, remember to sign both documents for our files, and return them as soon as possible to the address below:**

**Attention: Accounts Payable, Accounting Department  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765-4178**

If you do not return this information, we will not be able to establish you as a vendor. This will delay any payments and would still necessitate your submittal of the enclosed information to our Accounting department before payment could be initiated. Completion of this document and enclosed forms would ensure that your payments are processed timely and accurately.

**If you have any questions or need assistance in completing this information, please contact Accounting at (909) 396-3777. We appreciate your cooperation in completing this necessary information.**

Sincerely,

Michael B. O'Kelly  
Chief Financial Officer

DH:tm

Enclosures: Business Information Request  
Disadvantaged Business Certification  
W-9  
Form 590 Withholding Exemption Certificate  
Federal Contract Debarment Certification  
Campaign Contributions Disclosure  
Direct Deposit Authorization



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178

(909) 396-2000 • [www.aqmd.gov](http://www.aqmd.gov)

## BUSINESS INFORMATION REQUEST

Business Name	
Division of	
Subsidiary of	
Website Address	
Type of Business <i>Check One:</i>	<input type="checkbox"/> Individual <input type="checkbox"/> DBA, Name _____, County Filed in _____ <input type="checkbox"/> Corporation, ID No. _____ <input type="checkbox"/> LLC/LLP, ID No. _____ <input type="checkbox"/> Other _____

## REMITTING ADDRESS INFORMATION

Address			
City/Town			
State/Province		Zip	
Phone	(    )    -    Ext	Fax	(    )    -
Contact		Title	
E-mail Address			
Payment Name if Different			

**All invoices must reference the corresponding Purchase Order Number(s)/Contract Number(s) if applicable and mailed to:**

**Attention: Accounts Payable, Accounting Department  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765-4178**

## DISADVANTAGED BUSINESS CERTIFICATION

Federal guidance for utilization of disadvantaged business enterprises allows a vendor to be deemed a small business enterprise (SBE), minority business enterprise (MBE) or women business enterprise (WBE) if it meets the criteria below.

- is certified by the Small Business Administration or
- is certified by a state or federal agency or
- is an independent MBE(s) or WBE(s) business concern which is at least 51 percent owned and controlled by minority group member(s) who are citizens of the United States.

Statements of certification:

As a prime contractor to the SCAQMD, \_\_\_\_\_ (name of business) will engage in good faith efforts to achieve the fair share in accordance with 40 CFR Section 33.301, and will follow the six affirmative steps listed below **for contracts or purchase orders funded in whole or in part by federal grants and contracts.**

1. Place qualified SBEs, MBEs, and WBEs on solicitation lists.
2. Assure that SBEs, MBEs, and WBEs are solicited whenever possible.
3. When economically feasible, divide total requirements into small tasks or quantities to permit greater participation by SBEs, MBEs, and WBEs.
4. Establish delivery schedules, if possible, to encourage participation by SBEs, MBEs, and WBEs.
5. Use services of Small Business Administration, Minority Business Development Agency of the Department of Commerce, and/or any agency authorized as a clearinghouse for SBEs, MBEs, and WBEs.
6. If subcontracts are to be let, take the above affirmative steps.

**Self-Certification Verification: Also for use in awarding additional points, as applicable, in accordance with SCAQMD Procurement Policy and Procedure:**

Check all that apply:

- |   |  |
|---|--|
| <input type="checkbox"/> Small Business Enterprise/Small Business Joint Venture | <input type="checkbox"/> Women-owned Business Enterprise                               |
| <input type="checkbox"/> Local business   | <input type="checkbox"/> Disabled Veteran-owned Business Enterprise/DVBE Joint Venture |
| <input type="checkbox"/> Minority-owned Business Enterprise                     |  |

Percent of ownership: \_\_\_\_\_ %

Name of Qualifying Owner(s): \_\_\_\_\_

**State of California Public Works Contractor Registration No. \_\_\_\_\_ . MUST BE INCLUDED IF BID PROPOSAL IS FOR PUBLIC WORKS PROJECT.**

I, the undersigned, hereby declare that to the best of my knowledge the above information is accurate. Upon penalty of perjury, I certify information submitted is factual.

_____ NAME	_____ TITLE
---------------	----------------

## Definitions

**Disabled Veteran-Owned Business Enterprise** means a business that meets all of the following criteria:

- is a sole proprietorship or partnership of which is at least 51 percent owned by one or more disabled veterans, or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more disabled veterans; a subsidiary which is wholly owned by a parent corporation but only if at least 51 percent of the voting stock of the parent corporation is owned by one or more disabled veterans; or a joint venture in which at least 51 percent of the joint venture's management and control and earnings are held by one or more disabled veterans.
- the management and control of the daily business operations are by one or more disabled veterans. The disabled veterans who exercise management and control are not required to be the same disabled veterans as the owners of the business.
- is a sole proprietorship, corporation, partnership, or joint venture with its primary headquarters office located in the United States and which is not a branch or subsidiary of a foreign corporation, firm, or other foreign-based business.

**Joint Venture** means that one party to the joint venture is a DVBE and owns at least 51 percent of the joint venture. In the case of a joint venture formed for a single project this means that DVBE will receive at least 51 percent of the project dollars.

**Local Business** means a business that meets all of the following criteria:

- has an ongoing business within the boundary of the SCAQMD at the time of bid application.
- performs 90 percent of the work within SCAQMD's jurisdiction.

**Minority-Owned Business Enterprise** means a business that meets all of the following criteria:

- is at least 51 percent owned by one or more minority persons or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more minority persons.
- is a business whose management and daily business operations are controlled or owned by one or more minority person.
- is a business which is a sole proprietorship, corporation, partnership, joint venture, an association, or a cooperative with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign business.

"Minority" person means a Black American, Hispanic American, Native American (including American Indian, Eskimo, Aleut, and Native Hawaiian), Asian-Indian American (including a person whose origins are from India, Pakistan, or Bangladesh), Asian-Pacific American (including a person whose origins are from Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the United States Trust Territories of the Pacific, Northern Marianas, Laos, Cambodia, or Taiwan).

**Small Business Enterprise** means a business that meets the following criteria:

- a. 1) an independently owned and operated business; 2) not dominant in its field of operation; 3) together with affiliates is either:
  - A service, construction, or non-manufacturer with 100 or fewer employees, and average annual gross receipts of ten million dollars (\$10,000,000) or less over the previous three years, or
  - A manufacturer with 100 or fewer employees.
- b. Manufacturer means a business that is both of the following:
  - 1) Primarily engaged in the chemical or mechanical transformation of raw materials or processed substances into new products.
  - 2) Classified between Codes 311000 to 339000, inclusive, of the North American Industrial Classification System (NAICS) Manual published by the United States Office of Management and Budget, 2007 edition.



**Small Business Joint Venture** means that one party to the joint venture is a Small Business and owns at least 51 percent of the joint venture. In the case of a joint venture formed for a single project this means that the Small Business will receive at least 51 percent of the project dollars.

**Women-Owned Business Enterprise** means a business that meets all of the following criteria:

- is at least 51 percent owned by one or more women or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more women.
- is a business whose management and daily business operations are controlled or owned by one or more women.

is a business which is a sole proprietorship, corporation, partnership, or a joint venture, with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign business.

## Request for Taxpayer Identification Number and Certification

**Give Form to the  
requester. Do not  
send to the IRS.**

Print or type See Specific Instructions on page 2.	Name (as shown on your income tax return)	
	Business name/disregarded entity name, if different from above	
	Check appropriate box for federal tax classification: <input type="checkbox"/> Individual/sole proprietor <input type="checkbox"/> C Corporation <input type="checkbox"/> S Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Trust/estate  <input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ _____  <input type="checkbox"/> Other (see instructions) ▶ _____	Exemptions (see instructions):  Exempt payee code (if any) _____ Exemption from FATCA reporting code (if any) _____
	Address (number, street, and apt. or suite no.)	Requester's name and address (optional)
	City, state, and ZIP code	
List account number(s) here (optional)		

<b>Part I Taxpayer Identification Number (TIN)</b>																																					
Enter your TIN in the appropriate box. The TIN provided must match the name given on the "Name" line to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see <i>How to get a TIN</i> on page 3.																																					
<b>Note.</b> If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.	<table border="1" style="margin: 0 auto;"> <tr><td colspan="9" style="text-align: center;">Social security number</td></tr> <tr> <td style="width: 20px; height: 20px;"> </td> <td style="width: 20px; height: 20px;"> </td> <td style="width: 20px; height: 20px;"> </td> <td style="width: 20px; height: 20px;"> </td> <td style="width: 20px; height: 20px;"> </td> <td style="width: 20px; height: 20px;"> </td> <td style="width: 20px; height: 20px;"> </td> <td style="width: 20px; height: 20px;"> </td> <td style="width: 20px; height: 20px;"> </td> </tr> </table> <table border="1" style="margin: 0 auto;"> <tr><td colspan="9" style="text-align: center;">Employer identification number</td></tr> <tr> <td style="width: 20px; height: 20px;"> </td> <td style="width: 20px; height: 20px;"> </td> <td style="width: 20px; height: 20px;"> </td> <td style="width: 20px; height: 20px;"> </td> <td style="width: 20px; height: 20px;"> </td> <td style="width: 20px; height: 20px;"> </td> <td style="width: 20px; height: 20px;"> </td> <td style="width: 20px; height: 20px;"> </td> <td style="width: 20px; height: 20px;"> </td> </tr> </table>	Social security number																		Employer identification number																	
Social security number																																					
Employer identification number																																					

<b>Part II Certification</b>	
Under penalties of perjury, I certify that:	
1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and 2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and 3. I am a U.S. citizen or other U.S. person (defined below), and 4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.	
<b>Certification instructions.</b> You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.	
<b>Sign Here</b>	Signature of U.S. person ▶ _____  Date ▶ _____

### General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

**Future developments.** The IRS has created a page on IRS.gov for information about Form W-9, at [www.irs.gov/w9](http://www.irs.gov/w9). Information about any future developments affecting Form W-9 (such as legislation enacted after we release it) will be posted on that page.

### Purpose of Form

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, payments made to you in settlement of payment card and third party network transactions, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

- Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
- Certify that you are not subject to backup withholding, or
- Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the

withholding tax on foreign partners' share of effectively connected income, and

4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct.

**Note.** If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

**Definition of a U.S. person.** For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States,
- An estate (other than a foreign estate), or
- A domestic trust (as defined in Regulations section 301.7701-7).

**Special rules for partnerships.** Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States:

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity,
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust, and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

**Foreign person.** If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

**Nonresident alien who becomes a resident alien.** Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

**Example.** Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

**What is backup withholding?** Persons making certain payments to you must under certain conditions withhold and pay to the IRS a percentage of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

### Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the Part II instructions on page 3 for details),
3. The IRS tells the requester that you furnished an incorrect TIN,
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or
5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code* on page 3 and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships* on page 1.

**What is FATCA reporting?** The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code* on page 3 and the Instructions for the Requester of Form W-9 for more information.

## Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account, for example, if the grantor of a grantor trust dies.

## Penalties

**Failure to furnish TIN.** If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

**Civil penalty for false information with respect to withholding.** If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

**Criminal penalty for falsifying information.** Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

**Misuse of TINs.** If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

## Specific Instructions

### Name

If you are an individual, you must generally enter the name shown on your income tax return. However, if you have changed your last name, for instance, due to marriage without informing the Social Security Administration of the name change, enter your first name, the last name shown on your social security card, and your new last name.

If the account is in joint names, list first, and then circle, the name of the person or entity whose number you entered in Part I of the form.

**Sole proprietor.** Enter your individual name as shown on your income tax return on the "Name" line. You may enter your business, trade, or "doing business as (DBA)" name on the "Business name/disregarded entity name" line.

**Partnership, C Corporation, or S Corporation.** Enter the entity's name on the "Name" line and any business, trade, or "doing business as (DBA)" name on the "Business name/disregarded entity name" line.

**Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulation section 301.7701-2(c)(2)(iii). Enter the owner's name on the "Name" line. The name of the entity entered on the "Name" line should never be a disregarded entity. The name on the "Name" line must be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on the "Name" line. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on the "Business name/disregarded entity name" line. If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

**Note.** Check the appropriate box for the U.S. federal tax classification of the person whose name is entered on the "Name" line (Individual/sole proprietor, Partnership, C Corporation, S Corporation, Trust/estate).

**Limited Liability Company (LLC).** If the person identified on the "Name" line is an LLC, check the "Limited liability company" box only and enter the appropriate code for the U.S. federal tax classification in the space provided. If you are an LLC that is treated as a partnership for U.S. federal tax purposes, enter "P" for partnership. If you are an LLC that has filed a Form 8832 or a Form 2553 to be taxed as a corporation, enter "C" for C corporation or "S" for S corporation, as appropriate. If you are an LLC that is disregarded as an entity separate from its owner under Regulation section 301.7701-3 (except for employment and excise tax), do not check the LLC box unless the owner of the LLC (required to be identified on the "Name" line) is another LLC that is not disregarded for U.S. federal tax purposes. If the LLC is disregarded as an entity separate from its owner, enter the appropriate tax classification of the owner identified on the "Name" line.

**Other entities.** Enter your business name as shown on required U.S. federal tax documents on the "Name" line. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on the "Business name/disregarded entity name" line.

## Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the *Exemptions* box, any code(s) that may apply to you. See *Exempt payee code* and *Exemption from FATCA reporting code* on page 3.



**Exempt payee code.** Generally, individuals (including sole proprietors) are not exempt from backup withholding. Corporations are exempt from backup withholding for certain payments, such as interest and dividends. Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.

**Note.** If you are exempt from backup withholding, you should still complete this form to avoid possible erroneous backup withholding.

The following codes identify payees that are exempt from backup withholding:

- 1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)
- 2—The United States or any of its agencies or instrumentalities
- 3—A state, the District of Columbia, a possession of the United States, or any of their political subdivisions or instrumentalities
- 4—A foreign government or any of its political subdivisions, agencies, or instrumentalities
- 5—A corporation
- 6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a possession of the United States
- 7—A futures commission merchant registered with the Commodity Futures Trading Commission
- 8—A real estate investment trust
- 9—An entity registered at all times during the tax year under the Investment Company Act of 1940
- 10—A common trust fund operated by a bank under section 584(a)
- 11—A financial institution
- 12—A middleman known in the investment community as a nominee or custodian
- 13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over \$600 required to be reported and direct sales over \$5,000 <sup>1</sup>	Generally, exempt payees 1 through 5 <sup>2</sup>
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

<sup>1</sup> See Form 1099-MISC, Miscellaneous Income, and its instructions.

<sup>2</sup> However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney, and payments for services paid by a federal executive agency.

**Exemption from FATCA reporting code.** The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements.

- A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)
- B—The United States or any of its agencies or instrumentalities
- C—A state, the District of Columbia, a possession of the United States, or any of their political subdivisions or instrumentalities
- D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Reg. section 1.1472-1(c)(1)(i)
- E—A corporation that is a member of the same expanded affiliated group as a corporation described in Reg. section 1.1472-1(c)(1)(i)
- F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

- G—A real estate investment trust
- H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940
- I—A common trust fund as defined in section 584(a)
- J—A bank as defined in section 581
- K—A broker
- L—A trust exempt from tax under section 664 or described in section 4947(a)(1)
- M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

**Part I. Taxpayer Identification Number (TIN)**

**Enter your TIN in the appropriate box.** If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-member LLC that is disregarded as an entity separate from its owner (see *Limited Liability Company (LLC)* on page 2), enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

**Note.** See the chart on page 4 for further clarification of name and TIN combinations.

**How to get a TIN.** If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local Social Security Administration office or get this form online at [www.ssa.gov](http://www.ssa.gov). You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at [www.irs.gov/businesses](http://www.irs.gov/businesses) and clicking on Employer Identification Number (EIN) under Starting a Business. You can get Forms W-7 and SS-4 from the IRS by visiting [IRS.gov](http://IRS.gov) or by calling 1-800-TAX-FORM (1-800-829-3676).

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

**Note.** Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

**Caution:** A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

**Part II. Certification**

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if items 1, 4, or 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on the "Name" line must sign. Exempt payees, see *Exempt payee code* earlier.

**Signature requirements.** Complete the certification as indicated in items 1 through 5 below.

1. **Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983.** You must give your correct TIN, but you do not have to sign the certification.
2. **Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983.** You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.
3. **Real estate transactions.** You must sign the certification. You may cross out item 2 of the certification.
4. **Other payments.** You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).
5. **Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions.** You must give your correct TIN, but you do not have to sign the certification.

**What Name and Number To Give the Requester**

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account)	The actual owner of the account or, if combined funds, the first individual on the account <sup>1</sup>
3. Custodian account of a minor (Uniform Gift to Minors Act)	The minor <sup>2</sup>
4. a. The usual revocable savings trust (grantor is also trustee) b. So-called trust account that is not a legal or valid trust under state law	The grantor-trustee <sup>1</sup> The actual owner <sup>1</sup>
5. Sole proprietorship or disregarded entity owned by an individual	The owner <sup>3</sup>
6. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulation section 1.671-4(b)(2)(i)(A))	The grantor <sup>4</sup>
For this type of account:	Give name and EIN of:
7. Disregarded entity not owned by an individual	The owner
8. A valid trust, estate, or pension trust	Legal entity <sup>4</sup>
9. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
10. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
11. Partnership or multi-member LLC	The partnership
12. A broker or registered nominee	The broker or nominee
13. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
14. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulation section 1.671-4(b)(2)(i)(B))	The trust

<sup>1</sup> List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

<sup>2</sup> Circle the minor's name and furnish the minor's SSN.

<sup>3</sup> You must show your individual name and you may also enter your business or "DBA" name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

<sup>4</sup> List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships* on page 1.

**\*Note.** Grantor also must provide a Form W-9 to trustee of trust.

**Note.** If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

**Secure Your Tax Records from Identity Theft**

Identity theft occurs when someone uses your personal information such as your name, social security number (SSN), or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Publication 4535, Identity Theft Prevention and Victim Assistance.

Victims of identity theft who are experiencing economic harm or a system problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

**Protect yourself from suspicious emails or phishing schemes.** Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to [phishing@irs.gov](mailto:phishing@irs.gov). You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at: [spam@uce.gov](mailto:spam@uce.gov) or contact them at [www.ftc.gov/idtheft](http://www.ftc.gov/idtheft) or 1-877-IDTHEFT (1-877-438-4338).

Visit [IRS.gov](http://IRS.gov) to learn more about identity theft and how to reduce your risk.

**Privacy Act Notice**

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.



# 2014 Withholding Exemption Certificate

**590**

The payee completes this form and submits it to the withholding agent.

**Withholding Agent** (Type or print)

Name \_\_\_\_\_

**Payee**

Name \_\_\_\_\_

SSN or ITIN  FEIN  CA Corp no.  CA SOS file no.

Address (apt./ste., room, PO Box, or PMB no.) \_\_\_\_\_

City (If you have a foreign address, see instructions.) \_\_\_\_\_

State \_\_\_\_\_

ZIP Code \_\_\_\_\_

**Exemption Reason**

Check only one reason box below that applies to the payee.

By checking the appropriate box below, the Payee certifies the reason for the exemption from the California income tax withholding requirements on payment(s) made to the entity or individual.

**Individuals — Certification of Residency:**

I am a resident of California and I reside at the address shown above. If I become a nonresident at any time, I will promptly notify the withholding agent. See instructions for General Information D, Definitions.

**Corporations:**

The corporation has a permanent place of business in California at the address shown above or is qualified through the California Secretary of State (SOS) to do business in California. The corporation will file a California tax return. If this corporation ceases to have a permanent place of business in California or ceases to do any of the above, I will promptly notify the withholding agent. See instructions for General Information D, Definitions.

**Partnerships or limited liability companies (LLCs):**

The partnership or LLC has a permanent place of business in California at the address shown above or is registered with the California SOS, and is subject to the laws of California. The partnership or LLC will file a California tax return. If the partnership or LLC ceases to do any of the above, I will promptly inform the withholding agent. For withholding purposes, a limited liability partnership (LLP) is treated like any other partnership.

**Tax-Exempt Entities:**

The entity is exempt from tax under California Revenue and Taxation Code (R&TC) Section 23701 \_\_\_\_\_ (insert letter) or Internal Revenue Code Section 501(c) \_\_\_\_\_ (insert number). If this entity ceases to be exempt from tax, I will promptly notify the withholding agent. Individuals cannot be tax-exempt entities.

**Insurance Companies, Individual Retirement Arrangements (IRAs), or Qualified Pension/Profit Sharing Plans:**

The entity is an insurance company, IRA, or a federally qualified pension or profit-sharing plan.

**California Trusts:**

At least one trustee and one noncontingent beneficiary of the above-named trust is a California resident. The trust will file a California fiduciary tax return. If the trustee or noncontingent beneficiary becomes a nonresident at any time, I will promptly notify the withholding agent.

**Estates — Certification of Residency of Deceased Person:**

I am the executor of the above-named person's estate or trust. The decedent was a California resident at the time of death. The estate will file a California fiduciary tax return.

**Nonmilitary Spouse of a Military Servicemember:**

I am a nonmilitary spouse of a military servicemember and I meet the Military Spouse Residency Relief Act (MSRRA) requirements. See instructions for General Information E, MSRRA.

**CERTIFICATE OF PAYEE:** Payee must complete and sign below.

Under penalties of perjury, I hereby certify that the information provided in this document is, to the best of my knowledge, true and correct. If conditions change, I will promptly notify the withholding agent.

Payee's name and title (type or print) \_\_\_\_\_ Telephone (\_\_\_\_) \_\_\_\_\_

Payee's signature ► \_\_\_\_\_ Date \_\_\_\_\_

# Instructions for Form 590

## Withholding Exemption Certificate

References in these instructions are to the California Revenue and Taxation Code (R&TC).

### General Information

**Registered Domestic Partners (RDP)** – For purposes of California income tax, references to a spouse, husband, or wife also refer to a Registered Domestic Partner (RDP) unless otherwise specified. For more information on RDPs, get FTB Pub. 737, Tax Information for Registered Domestic Partners.

### A Purpose

Use Form 590, Withholding Exemption Certificate, to certify an exemption from nonresident withholding.

Form 590 does not apply to payments of backup withholding. For information on California backup withholding, go to [ftb.ca.gov](http://ftb.ca.gov) and search for **backup withholding**.

Form 590 does not apply to payments for wages to employees. Wage withholding is administered by the California Employment Development Department (EDD). For more information, go to [edd.ca.gov](http://edd.ca.gov) or call 888.745.3886.

Do not use Form 590 to certify an exemption from withholding if you are a **Seller of California real estate**. Sellers of California real estate use Form 593-C, Real Estate Withholding Certificate, to claim an exemption from real estate withholding.

**The following are excluded from withholding and completing this form:**

- The United States and any of its agencies or instrumentalities.
- A state, a possession of the United States, the District of Columbia, or any of its political subdivisions or instrumentalities.
- A foreign government or any of its political subdivisions, agencies, or instrumentalities.

### B Income Subject to Withholding

California Revenue and Taxation Code (R&TC) Section 18662 requires withholding of income or franchise tax on payments of California source income made to nonresidents of California.

Withholding is required on the following, but is not limited to:

- Payments to nonresidents for services rendered in California.
- Distributions of California source income made to domestic nonresident S corporation shareholders, partners, and members and allocations of California source income made to foreign partners and members.
- Payments to nonresidents for rents if the payments are made in the course of the withholding agent's business.

- Payments to nonresidents for royalties from natural resources with activities in California.
- Distributions of California source income to nonresident beneficiaries from an estate or trust.
- Endorsement payments received for services performed in California.
- Prizes and winnings received by nonresidents for contests in California.

However, withholding is optional if the total payments of California source income are \$1,500 or less during the calendar year.

For more information on withholding get FTB Pub. 1017, Resident and Nonresident Withholding Guidelines. To get a withholding publication, see Additional Information.

### C Who Certifies this Form

Form 590 is certified by the payee. California residents or entities exempt from the withholding requirement should complete Form 590 and submit it to the withholding agent. The withholding agent is then relieved of the withholding requirements if the agent relies in good faith on a completed and signed Form 590 unless notified by the Franchise Tax Board (FTB) that the form should not be relied upon.

An incomplete certificate is invalid and the withholding agent should not accept it. If the withholding agent receives an incomplete certificate, the withholding agent is required to withhold tax on payments made to the payee until a valid certificate is received. In lieu of a completed certificate on the preprinted form, the withholding agent may accept as a substitute certificate a letter from the payee explaining why the payee is not subject to withholding. The letter must contain all the information required on the certificate in similar language, including the under penalty of perjury statement and the payee's taxpayer identification number. The withholding agent must retain a copy of the certificate or substitute for at least four years after the last payment to which the certificate applies, and provide it upon request to the FTB.

For example, if an entertainer (or the entertainer's business entity) is paid for a performance, the entertainer's information must be provided. **Do not** submit the entertainer's agent or promoter information.

The grantor of a grantor trust shall be treated as the payee for withholding purposes. Therefore, if the payee is a grantor trust and one or more of the grantors is a nonresident, withholding is required. If all of the grantors on the trust are residents, no withholding is required. Resident grantors can check the box on Form 590 labeled "Individuals — Certification of Residency."

### D Definitions

**Nonresident** includes all of the following:

- Individuals who are not residents of California.
- Corporations not qualified through the California Secretary of State (CA SOS) to do business in California or having no permanent place of business in California.
- Partnerships or limited liability companies (LLCs) with no permanent place of business in California.
- Any trust without a resident grantor, beneficiary, or trustee, or estates where the decedent was not a California resident.

Foreign refers to non-U.S.

For more information about determining resident status, get FTB Pub. 1031, Guidelines for Determining Resident Status. Military servicemembers have special rules for residency. For more information, get FTB Pub. 1032, Tax Information for Military Personnel.

**Permanent Place of Business:**

A corporation has a permanent place of business in California if it is organized and existing under the laws of California or if it is a foreign corporation qualified to transact intrastate business by the CA SOS. A corporation that has not qualified to transact intrastate business (e.g., a corporation engaged exclusively in interstate commerce) will be considered as having a permanent place of business in California only if it maintains a permanent office in California that is permanently staffed by its employees.

### E Military Spouse Residency Relief Act (MSRRA)

Generally, for tax purposes you are considered to maintain your existing residence or domicile. If a military servicemember and nonmilitary spouse have the same state of domicile, the MSRRA provides:

- A spouse shall not be deemed to have lost a residence or domicile in any state solely by reason of being absent to be with the servicemember serving in compliance with military orders.
- A spouse shall not be deemed to have acquired a residence or domicile in any other state solely by reason of being there to be with the servicemember serving in compliance with military orders.

**Domicile** is defined as the one place:

- Where you maintain a true, fixed, and permanent home.
- To which you intend to return whenever you are absent.

A military servicemember's nonmilitary spouse is considered a nonresident for tax purposes if the servicemember and spouse have the same domicile outside of California and the spouse is in California solely to be with the servicemember who is serving in compliance with Permanent Change of Station orders.

California may require nonmilitary spouses of military servicemembers to provide proof that they meet the criteria for California personal income tax exemption as set forth in the MSRRA.

Income of a military servicemember's nonmilitary spouse for services performed in California is not California source income subject to state tax if the spouse is in California to be with the servicemember serving in compliance with military orders, and the servicemember and spouse have the same domicile in a state other than California.

For additional information or assistance in determining whether the applicant meets the MSRRA requirements, get FTB Pub. 1032.

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## Specific Instructions

### Payee Instructions

Enter the withholding agent's name.

Enter the payee's information, including the taxpayer identification number (TIN) and check the appropriate TIN box.

You must provide an acceptable TIN as requested on this form. The following are acceptable TINs: social security number (SSN); individual taxpayer identification number (ITIN); federal employer identification number (FEIN); California corporation number (CA Corp no.); or CA SOS file number.

**Private Mail Box (PMB)** – Include the PMB in the address field. Write "PMB" first, then the box number. Example: 111 Main Street PMB 123.

**Foreign Address** – Enter the information in the following order: City, Country, Province/Region, and Postal Code. Follow the country's practice for entering the postal code. **Do not** abbreviate the country's name.

Check the box that reflects the reason why the payee is exempt from the California income tax withholding requirement.

### Withholding Agent Instructions

Keep Form 590 for your records. **Do not** send this form to the FTB unless it has been specifically requested.

For more information, contact Withholding Services and Compliance, see Additional Information.

The payee must notify the withholding agent if any of the following situations occur:

- The individual payee becomes a nonresident.
- The corporation ceases to have a permanent place of business in California or ceases to be qualified to do business in California.
- The partnership ceases to have a permanent place of business in California.
- The LLC ceases to have a permanent place of business in California.
- The tax-exempt entity loses its tax-exempt status.

If any of these situations occur, then withholding may be required. For more information, get Form 592, Resident and Nonresident Withholding Statement, Form 592-B, Resident and Nonresident Withholding Tax Statement, and Form 592-V, Payment Voucher for Resident and Nonresident Withholding.

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## Additional Information

For additional information or to speak to a representative regarding this form, call the Withholding Services and Compliance telephone service at:

Telephone: **888.792.4900**  
916.845.4900

Fax: 916.845.9512

OR write to:

WITHHOLDING SERVICES AND  
COMPLIANCE MS F182  
FRANCHISE TAX BOARD  
PO BOX 942867  
SACRAMENTO CA 94267-0651

You can download, view, and print California tax forms and publications at [ftb.ca.gov](http://ftb.ca.gov).

OR to get forms by mail write to:

TAX FORMS REQUEST UNIT  
FRANCHISE TAX BOARD  
PO BOX 307  
RANCHO CORDOVA CA 95741-0307

For all other questions unrelated to withholding or to access the TTY/TDD numbers, see the information below.

### Internet and Telephone Assistance

Website: [ftb.ca.gov](http://ftb.ca.gov)  
Telephone: 800.852.5711 from within the  
United States  
916.845.6500 from outside the  
United States

TTY/TDD: 800.822.6268 for persons with  
hearing or speech impairments

### Asistencia Por Internet y Teléfono

Sitio web: [ftb.ca.gov](http://ftb.ca.gov)  
Teléfono: 800.852.5711 dentro de los  
Estados Unidos  
916.845.6500 fuera de los Estados  
Unidos

TTY/TDD: 800.822.6268 personas con  
discapacidades auditivas  
y del habla



## **Certification Regarding Debarment, Suspension, and Other Responsibility Matters**

The prospective participant certifies to the best of its knowledge and belief that it and the principals:

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- (b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them or commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction: violation of Federal or State antitrust statute or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and
- (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

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Typed Name & Title of Authorized Representative

---

Signature of Authorized Representative Date

I am unable to certify to the above statements. My explanation is attached.

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EPA Form 5700-49 (11-88)



## CAMPAIGN CONTRIBUTIONS DISCLOSURE

In accordance with California law, bidders and contracting parties are required to disclose, at the time the application is filed, information relating to any campaign contributions made to South Coast Air Quality Management District (SCAQMD) Board Members or members/alternates of the MSRC, including: the name of the party making the contribution (which includes any parent, subsidiary or otherwise related business entity, as defined below), the amount of the contribution, and the date the contribution was made. 2 C.C.R. §18438.8(b).

California law prohibits a party, or an agent, from making campaign contributions to SCAQMD Governing Board Members or members/alternates of the Mobile Source Air Pollution Reduction Review Committee (MSRC) of more than \$250 while their contract or permit is pending before the SCAQMD; and further prohibits a campaign contribution from being made for three (3) months following the date of the final decision by the Governing Board or the MSRC on a donor's contract or permit. Gov't Code §84308(d). For purposes of reaching the \$250 limit, the campaign contributions of the bidder or contractor plus contributions by its parents, affiliates, and related companies of the contractor or bidder are added together. 2 C.C.R. §18438.5.

In addition, SCAQMD Board Members or members/alternates of the MSRC must abstain from voting on a contract or permit if they have received a campaign contribution from a party or participant to the proceeding, or agent, totaling more than \$250 in the 12-month period prior to the consideration of the item by the Governing Board or the MSRC. Gov't Code §84308(c).

The list of current SCAQMD Governing Board Members can be found at the SCAQMD website ([www.aqmd.gov](http://www.aqmd.gov)). The list of current MSRC members/alternates can be found at the MSRC website (<http://www.cleantransportationfunding.org>).

### **SECTION I.**

**Contractor (Legal Name):** \_\_\_\_\_

DBA, Name _____, County Filed in _____ Corporation, ID No. _____ LLC/LLP, ID No. _____
--

**List any parent, subsidiaries, or otherwise affiliated business entities of Contractor:**  
(See definition below).

\_\_\_\_\_  
\_\_\_\_\_

### **SECTION II.**

Has Contractor and/or any parent, subsidiary, or affiliated company, or agent thereof, made a campaign contribution(s) totaling \$250 or more in the aggregate to a current member of the South Coast Air Quality Management Governing Board or member/alternate of the MSRC in the 12 months preceding the date of execution of this disclosure?

Yes     No    **If YES, complete Section II below and then sign and date the form. If NO, sign and date below. Include this form with your submittal.**

**Campaign Contributions Disclosure, *continued*:**

Name of Contributor \_\_\_\_\_

\_\_\_\_\_  
Governing Board Member or MSRC Member/Alternate                      Amount of Contribution                      Date of Contribution

Name of Contributor \_\_\_\_\_

\_\_\_\_\_  
Governing Board Member or MSRC Member/Alternate                      Amount of Contribution                      Date of Contribution

Name of Contributor \_\_\_\_\_

\_\_\_\_\_  
Governing Board Member or MSRC Member/Alternate                      Amount of Contribution                      Date of Contribution

Name of Contributor \_\_\_\_\_

\_\_\_\_\_  
Governing Board Member or MSRC Member/Alternate                      Amount of Contribution                      Date of Contribution

**I declare the foregoing disclosures to be true and correct.**

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**DEFINITIONS**

**Parent, Subsidiary, or Otherwise Related Business Entity (2 Cal. Code of Regs., §18703.1(d).)**

- (1) **Parent subsidiary.** A parent subsidiary relationship exists when one corporation directly or indirectly owns shares possessing more than 50 percent of the voting power of another corporation.
  
- (2) **Otherwise related business entity.** Business entities, including corporations, partnerships, joint ventures and any other organizations and enterprises operated for profit, which do not have a parent subsidiary relationship are otherwise related if any one of the following three tests is met:
  - (A) **One business entity has a controlling ownership interest in the other business entity.**
  - (B) **There is shared management and control between the entities. In determining whether there is shared management and control, consideration should be given to the following factors:**
    - (i) **The same person or substantially the same person owns and manages the two entities;**
    - (ii) **There are common or commingled funds or assets;**
    - (iii) **The business entities share the use of the same offices or employees, or otherwise share activities, resources or personnel on a regular basis;**
    - (iv) **There is otherwise a regular and close working relationship between the entities; or**
  - (C) **A controlling owner (50% or greater interest as a shareholder or as a general partner) in one entity also is a controlling owner in the other entity.**



# South Coast Air Quality Management District

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

## Direct Deposit Authorization

### STEP 1: Please check all the appropriate boxes

- |  |  |
|--|--|
| <input type="checkbox"/> Individual (Employee, Governing Board Member) | <input type="checkbox"/> New Request           |
| <input type="checkbox"/> Vendor/Contractor                             | <input type="checkbox"/> Cancel Direct Deposit |
| <input type="checkbox"/> Changed Information                           |  |

### STEP 2: Payee Information

Last Name		First Name		Middle Initial	Title
Vendor/Contractor Business Name (if applicable)					
Address				Apartment or P.O. Box Number	
City		State	Zip	Country	
Taxpayer ID Number		Telephone Number		Email Address	

### Authorization

- I authorize South Coast Air Quality Management District (SCAQMD) to direct deposit funds to my account in the financial institution as indicated below. I understand that the authorization may be rejected or discontinued by SCAQMD at any time. If any of the above information changes, I will promptly complete a new authorization agreement. If the direct deposit is not stopped before closing an account, funds payable to me will be returned to SCAQMD for distribution. This will delay my payment.
- This authorization remains in effect until SCAQMD receives written notification of changes or cancellation from you.
- I hereby release and hold harmless SCAQMD for any claims or liability to pay for any losses or costs related to insufficient fund transactions that result from failure within the Automated Clearing House network to correctly and timely deposit monies into my account.

### STEP 3:

You must verify that your bank is a member of an Automated Clearing House (ACH). Failure to do so could delay the processing of your payment. You must attach a voided check or have your bank complete the bank information and the account holder must sign below.

### To be Completed by your Bank

<b>Staple Voided Check Here</b>	Name of Bank/Institution				
	Account Holder Name(s)				
	<input type="checkbox"/> Saving <input type="checkbox"/> Checking		Account Number	Routing Number	
	Bank Representative Printed Name		Bank Representative Signature		Date
	ACCOUNT HOLDER SIGNATURE:				Date

For SCAQMD Use Only

Input By \_\_\_\_\_

Date \_\_\_\_\_



**RULE 2449 FLEET COMPLIANCE PLAN**

1.	COMPANY NAME:
2.	MAILING ADDRESS:
3.	CONTACT PERSON, TITLE, TELEPHONE, EMAIL:
4.	ALTERNATE CONTACT, TITLE, TELEPHONE, EMAIL:
5.	<p>FLEET SUMMARY</p> <p>PLEASE PROVIDE DESCRIPTION OF YOUR FLEET AND TYPE OF BUSINESS IT IS IN.</p> <p>FLEET DESCRIPTION: _____</p> <p># OF VEHICLES: _____ # OF ENGINES: _____ DOORS FLEET # _____</p> <p>TOTAL HORSEPOWER OF FLEET: _____</p>
6.	<p>SIGNATURE OF PERSON RESPONSIBLE FOR RULE 2449 COMPLIANCE</p> <p>I HEREBY CERTIFY, UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA, THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS COMPLIANCE PLAN IS TRUE AND CORRECT. I ALSO ACKNOWLEDGE THAT THIS PLAN IS BEING PROVIDED TO THE SCAQMD EXECUTIVE OFFICER IN COMPLIANCE WITH THE SCAQMD RULE 2449. APPROVAL OF THIS COMPLIANCE PLAN IS SUBJECT TO VERIFICATION OF INFORMATION SUBMITTED. I UNDERSTAND THAT SCAQMD STAFF MAY REQUIRE ADDITIONAL INFORMATION TO PROCESS THIS COMPLIANCE PLAN, AND AGREE TO PROVIDE SUCH INFORMATION.</p> <p>SIGNATURE: _____</p> <p>NAME: _____</p> <p>TITLE: _____</p> <p>SIGNED THIS _____ DAY OF _____</p> <p>IN _____, CALIFORNIA</p>

If you need assistance in preparing the compliance plan,  
 please call the Off-Road Mobile Source Section at (909) 396-2903.



<b>SCAQMD Use Only:</b> App. # _____ Project Type: _____
---

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
SOON PROGRAM (FY 15/16)**

**FORM B-1 - OFF-ROAD HEAVY-DUTY  
EQUIPMENT REPLACEMENT**

Please complete one form for each piece of equipment. For multiple unit requests, you may submit a spreadsheet that provides all requested information below, in the order presented below.

Company name/ Organization name/ Individual name:	
Equipment Identifier (Unit # or Company ID):	EIN
Is the vehicle location address the same as the applicant address? <input type="checkbox"/> Yes <input type="checkbox"/> No, (please provide vehicle address below)	
Street Address:	
City:	
Zip Code:	

**I. BASELINE (EXISTING) EQUIPMENT INFORMATION**

Equipment Type/Function (Diesel): _____ (Backhoe, baler, cargo container handling unit, combine, crane, crawler tractor, crushing/processing, excavator, forklift, grader, ground support equipment, hydro-power unit, loader, mower, off-highway tractor, off-highway truck, paver, paving equipment, roller, rubber-tired dozer, rubber-tired loader, scraper, signal board, skid steer loader, sprayer, surfacing equipment, swather, tractor, tiller, trencher, or other.)
---

Equipment Make:	Equipment Model:
Equipment Model Year:	Equipment Serial Number or VIN:
Number of Engines on this Equipment: _____ Main (Front)      _____ Auxiliary	

**II. USAGE/ACTIVITY INFORMATION**

<b>Note:</b> Please provide projected annual usage for the new equipment over the proposed life of the project. This projection should be based on actual usage data for the baseline equipment. You <b>MUST</b> attach documentation supporting the projected annual usage and operation within the District and within California. Supporting documentation may be in the form of maintenance records, fuel receipts, hour-meter reports, logs, or other paperwork for each piece of baseline equipment covering at least the past 24 months.	
Total Annual Hours of Operation: _____ <b>or</b> Gallons of Fuel Used: _____	
If Hours, Does the Equipment Have a Functioning Hour Meter? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Percent Operation within CA: _____%	Percent Operation within District: _____%
Project Life: _____ years. Equipment must operate for this full life; this life is equivalent to the contract and the reporting term.	

**III. BASELINE (EXISTING) ENGINE INFORMATION (for each engine)**

<input type="checkbox"/> Main (Front) Engine		<input type="checkbox"/> Auxiliary (Rear) Engine	
Fuel Type:	Baseline Engine Make:		
Baseline Engine Model:	Baseline Engine Year:		
Engine Serial No.:	Baseline Engine Horsepower:		
Baseline Engine Tier:	Baseline Engine Family:		
<input type="checkbox"/> Main (Front) Engine		<input type="checkbox"/> Auxiliary (Rear) Engine	
Fuel Type:	Baseline Engine Make:		
Baseline Engine Model:	Baseline Engine Year:		
Engine Serial No.:	Baseline Engine Horsepower:		
Baseline Engine Tier:	Baseline Engine Family:		
Method proposed for rendering the baseline engine(s) inoperable:			

**IV. NEW REPLACEMENT EQUIPMENT INFORMATION**

Equipment Type/Function:	Equipment Make:		
Equipment Model:	Equipment Model Year:		
Equipment Serial Number or VIN (If available):	Number of Engines on this Equipment: _____ Main (Front)    _____ Auxiliary (Rear)		

**V. NEW REPLACEMENT EQUIPMENT ENGINE INFORMATION (for each engine)**

<input type="checkbox"/> Main (Front) Engine		<input type="checkbox"/> Auxiliary (Rear) Engine	
Fuel Type:	New Engine Make:		
New Engine Model:	New Engine Year:		
Engine Serial No:	New Engine Horsepower:		
New Engine Tier:	New Engine Family:		
New Engine ARB Executive Order Number (Attach a copy):			
<input type="checkbox"/> Main (Front) Engine		<input type="checkbox"/> Auxiliary (Rear) Engine	
Fuel Type:	New Engine Make:		
New Engine Model:	New Engine Year:		
Engine Serial No:	New Engine Horsepower:		
New Engine Tier:	New Engine Family:		
New Engine ARB Executive Order Number (Attach a copy):			

**VI. FUNDING INFORMATION**

New Equipment Cost (incl. tax): \$_____
<b>NOTE:</b> You <b>MUST</b> attach a written estimate or quotation from the equipment vendor documenting the cost of the new equipment. This quote must be obtained within 90 days of prior to the closing date of the Program Announcement.
Applicant Co-Funding Amount (if any): \$
Funds Requested: \$
New Equipment Vendor:





<b>SCAQMD Use Only:</b> App. # _____ Project Type: _____
---

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
 SOON PROGRAM (FY 15/16)  
 FORM B-2 - OFF-ROAD HEAVY-DUTY EQUIPMENT  
Repower Only or Repower/Retrofit**

Please complete one form for each piece of equipment. For multiple unit requests, you may submit a spreadsheet that provides all requested information below, in the order presented below.

Company name/ Organization name/ Individual name:	
Equipment Identifier (Unit # or Company ID):	EIN
Is the vehicle location address the same as the applicant address? <input type="checkbox"/> Yes <input type="checkbox"/> No, (please provide vehicle address below)	
Street Address:	
City:	
Zip Code:	

**I. BASELINE (EXISTING) EQUIPMENT INFORMATION**

Equipment Type/Function (Diesel): _____ <small>(Backhoe, baler, cargo container handling unit, combine, crane, crawler tractor, crushing/processing, excavator, forklift, grader, ground support equipment, hydro-power unit, loader, mower, off-highway tractor, off-highway truck, paver, paving equipment, roller, rubber-tired dozer, rubber-tired loader, scraper, signal board, skid steer loader, sprayer, surfacing equipment, swather, tractor, tiller, trencher, or other.)</small>
--

Equipment Make:	Equipment Model:
Equipment Model Year:	Equipment Serial Number or VIN:
Number of Engines on this Equipment: _____ Main (Front)      _____ Auxiliary	

**II. USAGE/ACTIVITY INFORMATION**

<b>Note:</b> Please provide projected annual usage for the new equipment over the proposed life of the project. This projection should be based on actual usage data for the baseline equipment. You <b>MUST</b> attach documentation supporting the projected annual usage and operation within the District and within California. Supporting documentation may be in the form of maintenance records, fuel receipts, hour-meter reports, logs, or other paperwork for each piece of baseline equipment covering at least the past 24 months.	
Total Annual Hours of Operation: _____ <b>or</b> Gallons of Fuel Used: _____	
If Hours, Does the Equipment Have a Functioning Hour Meter? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Percent Operation within CA: _____%	Percent Operation within District: _____%
Project Life: _____ years. Equipment must operate for this full life; this life is equivalent to the contract and the reporting term.	

**III. BASELINE (EXISTING) ENGINE INFORMATION (for each engine)**

<input type="checkbox"/> Main (Front) Engine		<input type="checkbox"/> Auxiliary (Rear) Engine	
Fuel Type:		Baseline Engine Make:	
Baseline Engine Model:		Baseline Engine Year:	
Engine Serial No.:		Baseline Engine Horsepower:	
Baseline Engine Tier:		Baseline Engine Family:	
<input type="checkbox"/> Main (Front) Engine		<input type="checkbox"/> Auxiliary (Rear) Engine	
Fuel Type:		Baseline Engine Make:	
Baseline Engine Model:		Baseline Engine Year:	
Engine Serial No.:		Baseline Engine Horsepower:	
Baseline Engine Tier:		Baseline Engine Family:	
Method proposed for rendering the baseline engine(s) inoperable:			

**IV. NEW ENGINE INFORMATION (for each engine)**

<input type="checkbox"/> Main (Front) Engine		<input type="checkbox"/> Auxiliary (Rear) Engine	
Fuel Type:		New Engine Make:	
New Engine Model:		New Engine Year:	
New Engine Tier:		New Engine Horsepower:	
New Engine ARB Executive Order Number (Attach a copy):		New Engine Family:	
<input type="checkbox"/> Main (Front) Engine		<input type="checkbox"/> Auxiliary (Rear) Engine	
Fuel Type:		New Engine Make:	
New Engine Model:		New Engine Year:	
New Engine Tier:		New Engine Horsepower:	
New Engine ARB Executive Order Number (Attach a copy):		New Engine Family:	

**V. RETROFIT INFORMATION (If Applicable)**

**NOTE:** You **MUST** attach a copy of the ARB Executive Order for the retrofit device and indicate (circle) on the Executive Order Attachment the engine family name for the engine on which the device will be installed.

<input type="checkbox"/> Main (Front) Engine		<input type="checkbox"/> Auxiliary (Rear) Engine	
Retrofit Device Make:	Verified NOx Reduction:	%	
Retrofit Device Model:	Verified PM Reduction:	%	
Retrofit Family Name:	Verified ROG Reduction:	%	
Verification Level:			
<input type="checkbox"/> Main (Front) Engine		<input type="checkbox"/> Auxiliary (Rear) Engine	
Retrofit Device Make:	Verified NOx Reduction:	%	
Retrofit Device Model:	Verified PM Reduction:	%	
Retrofit Family Name:	Verified ROG Reduction:	%	
Verification Level:			

**VI. FUNDING INFORMATION (ENGINE REPOWER)**

<input type="checkbox"/> Main (Front) Engine		<input type="checkbox"/> Auxiliary (Rear) Engine	
<b>New Engine Cost (incl. tax): \$</b>		<b>Installation Cost: \$</b>	
<p><b>NOTE:</b> You <b>MUST</b> attach a written estimate or quotation from the equipment vendor documenting the cost of the new engine. This quote must be obtained within 90 days of prior to the closing date of the Program Announcement.</p>			
Applicant Co-Funding Amount (if any): \$			
Applicant Grant Request Amount: \$			
New Equipment Vendor:			
<input type="checkbox"/> Main (Front) Engine		<input type="checkbox"/> Auxiliary (Rear) Engine	
<b>New Engine Cost (incl. tax): \$</b>		<b>Installation Cost: \$</b>	
<p><b>NOTE:</b> You <b>MUST</b> attach a written estimate or quotation from the equipment vendor documenting the cost of the new engine. This quote must be obtained within 90 days of prior to the closing date of the Program Announcement.</p>			
Applicant Co-Funding Amount (if any): \$			
Applicant Grant Request Amount: \$			
New Equipment Vendor:			

**VII. FUNDING INFORMATION (RETROFIT)**

<input type="checkbox"/> Main (Front) Engine _____ <input type="checkbox"/> Auxiliary (Rear) Engine _____
Retrofit Device Cost (including tax): \$
<b>NOTE:</b> You MUST attach a written estimate from the equipment vendor documenting the cost of the device; this quote must be obtained within 90 days prior to the closing date of the Program Announcement.
Retrofit Device Installation Cost:
Retrofit Device Maintenance Cost:
Applicant Grant Request: \$
Retrofit Device Vendor and Installer:
<input type="checkbox"/> Main (Front) Engine <input type="checkbox"/> Auxiliary (Rear) Engine
Retrofit Device Cost (including tax): \$
<b>NOTE:</b> You MUST attach a written estimate from the equipment vendor documenting the cost of the device; this quote must be obtained within 90 days prior to the closing date of the Program Announcement.
Retrofit Device Installation Cost:
Retrofit Device Maintenance Cost:
Applicant Grant Request: \$
Retrofit Device Vendor and Installer:



<b>SCAQMD Use Only:</b> App. # _____ Project Type: _____
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**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**  
**SOON PROGRAM (FY 15/16)**  
**FORM B-3 - OFF-ROAD HEAVY-DUTY EQUIPMENT**  
**NOx Retrofit Only**

Please complete one form for each piece of equipment. For multiple unit requests, you may submit a spreadsheet that provides all requested information below, in the order presented below.

Company name/ Organization name/ Individual name:	
Equipment Identifier (Unit # or Company ID):	EIN
Is the vehicle location address the same as the applicant address? <input type="checkbox"/> Yes <input type="checkbox"/> No, (please provide vehicle address below)	
Street Address:	
City:	
Zip Code:	

**I. BASELINE (EXISTING) EQUIPMENT INFORMATION**

Equipment Type/Function (Diesel): _____
(Backhoe, baler, cargo container handling unit, combine, crane, crawler tractor, crushing/processing, excavator, forklift, grader, ground support equipment, hydro-power unit, loader, mower, off-highway tractor, off-highway truck, paver, paving equipment, roller, rubber-tired dozer, rubber-tired loader, scraper, signal board, skid steer loader, sprayer, surfacing equipment, swather, tractor, tiller, trencher, or other.)

Equipment Make:	Equipment Model:
Equipment Model Year:	Equipment Serial Number or VIN:
Number of Engines on this Equipment: _____ Main (Front)      _____ Auxiliary	

**II. USAGE/ACTIVITY INFORMATION**

<b>Note:</b> Please provide projected annual usage for the new equipment over the proposed life of the project. This projection should be based on actual usage data for the baseline equipment. You <b>MUST</b> attach documentation supporting the projected annual usage and operation within the District and within California. Supporting documentation may be in the form of maintenance records, fuel receipts, hour-meter reports, logs, or other paperwork for each piece of baseline equipment covering at least the past 24 months.	
Total Annual Hours of Operation: _____ <b>or</b> Gallons of Fuel Used: _____	
If Hours, Does the Equipment Have a Functioning Hour Meter? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Percent Operation within CA: _____%	Percent Operation within District: _____%
Project Life: _____ years. Equipment must operate for this full life; this life is equivalent to the contract and the reporting term.	

**III. BASELINE (EXISTING) ENGINE INFORMATION (for each engine)**

<input type="checkbox"/> Main (Front) Engine		<input type="checkbox"/> Auxiliary (Rear) Engine	
Fuel Type:		Baseline Engine Make:	
Baseline Engine Model:		Baseline Engine Year:	
Engine Serial No.:		Baseline Engine Horsepower:	
Baseline Engine Tier:		Baseline Engine Family:	
<input type="checkbox"/> Main (Front) Engine		<input type="checkbox"/> Auxiliary (Rear) Engine	
Fuel Type:		Baseline Engine Make:	
Baseline Engine Model:		Baseline Engine Year:	
Engine Serial No.:		Baseline Engine Horsepower:	
Baseline Engine Tier:		Baseline Engine Family:	
Method proposed for rendering the baseline engine(s) inoperable:			

**IV. RETROFIT INFORMATION (for each engine)**

**NOTE:** You **MUST** attach a copy of the ARB Executive Order for the retrofit device and indicate (circle) on the Executive Order Attachment the engine family name for the engine on which the device will be installed.

<input type="checkbox"/> Main (Front) Engine		<input type="checkbox"/> Auxiliary (Rear) Engine	
Retrofit Device Make:		Verified NOx Reduction:        %	
Retrofit Device Model:			
Retrofit Family Name:			
Verification Level:			
Retrofit Device Serial #:			
<input type="checkbox"/> Main (Front) Engine		<input type="checkbox"/> Auxiliary (Rear) Engine	
Retrofit Device Make:			
Retrofit Device Model:			
Retrofit Family Name:			
Verification Level:			
Retrofit Device Serial #:			

**V. FUNDING INFORMATION**

<input type="checkbox"/> Main (Front) Engine <span style="margin-left: 150px;"><input type="checkbox"/> Auxiliary (Rear) Engine</span>
Retrofit Device Cost (including tax): \$
<b>NOTE:</b> You MUST attach a written estimate from the equipment vendor documenting the cost of the device; this quote must be obtained within 90 days prior to the closing date of the Program Announcement.
Retrofit Device Installation Cost:
Retrofit Device Maintenance Cost:
Applicant Grant Request: \$
Retrofit Device Vendor and Installer:
<input type="checkbox"/> Main (Front) Engine <span style="margin-left: 150px;"><input type="checkbox"/> Auxiliary (Rear) Engine</span>
Retrofit Device Cost (including tax): \$
<b>NOTE:</b> You MUST attach a written estimate from the equipment vendor documenting the cost of the device; this quote must be obtained within 90 days prior to the closing date of the Program Announcement.
Retrofit Device Installation Cost:
Retrofit Device Maintenance Cost:
Applicant Grant Request: \$
Retrofit Device Vendor and Installer:

BOARD MEETING DATE: March 6, 2015

AGENDA NO. 4

PROPOSAL: Execute and Modify Contracts for Hydrogen Station Upgrades and Related Work 

SYNOPSIS: Last year, the Board approved contracts for hydrogen station upgrades in the South Coast Air Basin. While these stations are being upgraded, equipment must be taken out of service. To continue to provide hydrogen fuel to customers at stations being upgraded, CEC through PON 13-607 provided \$999,677 to develop and deploy a commercial mobile hydrogen fueler at stations going offline for the equipment upgrade transition. This action is to cofund development and demonstration of the commercial mobile hydrogen fueler up to \$200,000 from the Clean Fuels Fund (31). These actions are to also modify a previous award for Mebtahi's hydrogen station upgrade adding \$400,000 and to amend a technical assistance contract adding \$50,000 to evaluate upgraded hydrogen equipment from the Hydrogen Fueling Infrastructure Network Fund (63). Finally, temporary loans of \$201,461 and \$297,460 from the Clean Fuels Fund (31) to the Hydrogen Fueling Infrastructure Fund (63) and Hydrogen Fueling Station Special Revenue Fund (55), respectively, are required until CEC revenue is received to implement hydrogen station upgrades and readiness efforts.

COMMITTEE: Technology, February 20, 2015; Recommended for Approval

**RECOMMENDED ACTIONS:**

1. Authorize the Chairman to execute a contract with H2 Frontier, Inc. to cofund development and demonstration of a commercial mobile hydrogen fueler in an amount up to \$200,000 from the Clean Fuels Fund (31).
2. Authorize the Chairman to execute the following from the Hydrogen Fueling Infrastructure Network Fund (63) using CEC grant revenue for hydrogen station upgrades:
  - a. A contract with Mebtahi Station Services Inc. for hydrogen equipment upgrades in an amount up to \$989,661 (adding \$400,000 to original award of \$589,661); and



- b. A contract modification with Jerald A. Cole adding \$50,000 for evaluation of upgraded dispensing equipment and meters.
3. Authorize temporary loans from the Clean Fuels Fund (31) to be repaid upon reimbursement under provisions of CEC grants as follows:
  - a. An additional \$201,461 to the Hydrogen Fueling Infrastructure Fund (63) for hydrogen station upgrades and related work; and
  - b. \$297,460 to the Hydrogen Fueling Station Special Revenue Fund (55) for hydrogen readiness in early market communities.
4. Authorize reimbursement to the SCAQMD General Fund of up to \$15,002 from Hydrogen Fueling Station Special Revenue Fund (55) for administrative costs necessary to implement the CEC grant for hydrogen readiness in early market communities.

Barry R. Wallerstein, D.Env.  
Executive Officer

MMM:LM:PSK/DAH

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### **Background**

In June 2013, the Board recognized \$6.69 million in revenue from CEC to upgrade and refurbish existing, publicly accessible hydrogen fueling stations. The SCAQMD released an RFP to award these funds to existing stations needing upgrades. In March and September 2014, the Board approved contracts for hydrogen fueling station upgrades in the South Coast Air Basin (Basin). While these stations are being upgraded, the equipment must be taken out of service. To ensure customers can continue to fuel at the hydrogen stations being upgraded in the Basin, CEC through PON 13-607 awarded Gas Technology Institute (GTI) \$999,677 to develop and demonstrate a commercial mobile hydrogen fueler, which would be used during upgrade transitions and temporary dispensing issues. GTI has partnered with U.S. Hybrid and H2 Frontier, Inc. Staff proposes to cost-share this project.

One of the Board awards in September 2014 was to upgrade the dispenser and canopy for the Mebtahi hydrogen station using CEC revenue funding in the amount of \$589,661. However, subsequent to this award, OEMs expressed concern that the fills would take too long and not meet current automotive performance specifications unless the compressor is also upgraded. Staff proposes to use unallocated funds from the CEC revenue grant to also upgrade the compressor.

Included within the \$6.69 million CEC grant is an allocation to assess the state of existing hydrogen stations, test and evaluate the upgraded hydrogen equipment and meters, and

submit final reporting to CEC on these efforts. Staff proposes to modify one of its technical assistance contracts to have this work performed.

Additionally, Board actions in November 2013 and March 2014 authorized a temporary loan of \$6,445,000 from the Clean Fuels Fund (31) to the Hydrogen Fueling Infrastructure Fund (63) to implement hydrogen station upgrades and related work, but an additional temporary loan is required at this time.

Lastly, on May 2, 2014, the Board recognized upon receipt up to \$299,360 from the CEC into the Hydrogen Fueling Station Special Revenue Fund (55) as pass-through revenue for a contract with Bevilacqua-Knight, Inc. (BKl) to conduct hydrogen readiness efforts in early market communities. The CEC grant was executed for \$297,460, which comprises \$282,458 for BKl's contract and \$15,002 for administrative costs. In order to execute the contract with BKl and reimburse the General Fund for administrative costs, a temporary loan of \$297,460 from the Clean Fuels Fund (31) to the Hydrogen Fueling Station Special Revenue Fund (55) is required pending receipt of the CEC grant funds.

### **Proposal**

This action would be to cost-share development and deployment of a commercial mobile hydrogen fueler. The mobile fueler can be a stand-alone unit for remote filling or integrated into stations experiencing temporary dispensing issues during transition to upgraded equipment or repairs. The fueler will connect to the onsite hydrogen storage supply and have the ability to connect with existing hydrogen dispensers to fill onboard storage. The mobile hydrogen fueler will use renewable fuel if possible and would be deployed at hydrogen stations as needed. Project partners include the GTI, U.S. Hybrid and H2 Frontier, Inc.

The upgrade of Mebtahi's existing hydrogen fueling station in Harbor City, in addition to providing a new dual pressure dispenser that is certified for selling hydrogen fuel on a retail basis using credit cards and a canopy over the hydrogen dispenser, would also upgrade the compressor and replace the hydrogen storage with four new storage tubes to enable faster back-to-back high-pressure fills and increased daily capacity. This upgrade will strengthen the evolving hydrogen station network and improve consumer options. This action is to modify the previous award to Mebtahi Station Services Inc. to provide additional funding to also upgrade the compressor and replace the hydrogen storage tubes.

Additionally, this action is to modify a contract with Jerald A. Cole to add funding for the testing and evaluation of upgraded hydrogen equipment and meters and prepare reports on the effort for submission to CEC. The additional funds will utilize a portion of the revenue set aside in the CEC grant for this effort. Mr. Cole was awarded his current technical assistance contract through a formal RFP process. Mr. Cole has over 30 years of experience in the fields of emission controls, combustion technologies, hydrogen,

alternative fuels, and stationary engines, as well as extensive experience in providing services in these fields to local, state and federal environmental agencies.

This action is also to authorize an additional temporary loan of \$201,461, for a total of \$6,646,461, from the Clean Fuels Fund (31) to the Hydrogen Fueling Infrastructure Fund (63) to be repaid upon reimbursement under the provisions of CEC's grant awarding funds for hydrogen station upgrades and related work.

Lastly, this action is to authorize a temporary loan of \$297,460 from the Clean Fuels Fund (31) to the Hydrogen Fueling Station Special Revenue Fund (55) to be repaid upon reimbursement under the provisions of CEC's grant awarding funds for hydrogen readiness in early market communities.

### **Sole Source Justification**

Section VIII.B.2 of the Procurement Policy and Procedures identifies four major provisions under which a sole source award may be justified. This request for sole source award with H2 Frontier, Inc. is made under B.2.c (1): The unique experience and capabilities of the proposed contractor or contractor team, and B.2.d (1): Projects including cost sharing by multiple sponsors. Project partners include the Gas Technology Institute, U.S. Hybrid and H2 Frontier, Inc. The CEC is contributing funds with cost-share also provided by U.S. Hybrid and H2 Frontier, Inc.

### **Benefits to SCAQMD**

SCAQMD supports hydrogen and fuel cell technologies and recognizes that light-, medium- and heavy-duty vehicles must achieve zero or near-zero emissions if the region hopes to meet state and federal air quality attainment standards. These projects will help ensure that sufficient hydrogen infrastructure is available to support the impending OEM roll out of fuel cell vehicles over the next few years and are included in the *Draft 2015 Clean Fuels Program Plan Update* under "Develop and Demonstrate Distributed Hydrogen Production and Fueling Stations." SCAQMD's Clean Fuels Program has been active in funding the development and demonstration of low-emission, hydrogen fuel technologies. Hydrogen vehicles and refueling stations are necessary to comply with CARB's ZEV regulation to reduce criteria pollutant emissions and development of an extensive hydrogen fueling network in Southern California will accelerate the deployment of these cleaner vehicles.

### **Resource Impacts**

Total project costs to develop and deploy the commercial mobile hydrogen fueler are estimated at \$1,665,654. The contract with H2 Frontier, Inc. shall not exceed \$200,000 (12% of total costs) from the Clean Fuels Fund (31). Funding is broken down as follows:

	CEC Funding	Partner Cost-Share
Gas Technology Institute	\$224,677	\$15,064
U.S. Hybrid	\$400,000	\$375,913
H2 Frontier, Inc.	\$375,000	75,000
SCAQMD ( <i>requested</i> )		200,000
<b>Totals</b>	<b>\$999,677</b>	<b>\$665,977</b>

Sufficient funds are available from the Clean Fuels Fund (31) for these projects and services. The Clean Fuels Fund was established as a special revenue fund resulting from the state-mandated Clean Fuels Program. The Clean Fuels Program, under Health and Safety Code Sections 40448.5 and 40512 and Vehicle Code Section 9250.11, establishes mechanisms to collect revenues from mobile sources to support projects to increase the utilization of clean fuels, including the development of the necessary advanced enabling technologies. Funds collected from motor vehicles are restricted, by statute, to be used for projects and program activities related to mobile sources that support the objectives of the Clean Fuels Program.

The \$6.69 million grant CEC previously awarded to SCAQMD was recognized into the Hydrogen Fueling Infrastructure Network Fund (63). The contract with Mebtahi Station Services Inc. shall not exceed \$989,661 and the contract modification with Jerald A. Cole shall not exceed \$50,000; both will be funded from Fund 63 using the CEC grant revenue. An additional temporary loan of \$201, 461, for a total of \$6,646,461, from the Clean Fuels Fund to the Hydrogen Fueling Infrastructure Fund (63) shall be repaid upon reimbursement under the provisions of CEC's grant (600-12-018) awarding funds for hydrogen station upgrades and related work.

The temporary loan of \$297,460 from the Clean Fuels Fund (31) to the Hydrogen Fueling Station Special Revenue Fund (55) shall be repaid upon reimbursement under the provisions of CEC's grant (600-12-018) awarding funds for hydrogen readiness in early market communities. Of the \$297,460 CEC grant, \$282,458 is for BKi's contract and \$15,002 is to reimburse the SCAQMD General Fund for administrative costs.

BOARD MEETING DATE: March 6, 2015

AGENDA NO. 5

PROPOSAL: Issue Program Announcement for School Bus Replacements and Retrofits 

SYNOPSIS: Since 2001, the SCAQMD has replaced over 1,400 pre-1994 school buses and retrofitted nearly 3,400 school buses. The Carl Moyer AB 923 funds can be utilized for replacement and retrofit of school buses. This action is to approve the issuance of a Program Announcement to replace pre-1994 school buses with new alternative fuel buses and to retrofit 1994 to 2006 model year school buses with particulate traps.

COMMITTEE: Technology, February 20, 2015; Recommended for Approval

**RECOMMENDED ACTION:**

Approve issuance of Program Announcement #PA2015-06 for replacement of pre-1994 school buses owned by public school districts with new alternative fuel buses and retrofit of 1994 to 2006 model year diesel school buses with particulate traps owned by public school districts and private contractors.

Barry R. Wallerstein, D.Env.  
Executive Officer

MMM:FM:RG

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**Background**

Since the commencement of the Lower-Emission School Bus Program in 2001, SCAQMD has awarded nearly \$250 million in state and local funds to replace over 1,400 highly polluting school buses with alternative fuel buses and to retrofit 3,400 newer diesel school buses with particulate traps. This program has resulted in helping thousands of school kids to commute in some of the cleanest school buses in the country.

## **Proposal**

This action is to issue Program Announcement #PA2015-06 for replacement of pre-1994 school buses owned by public school districts with new alternative fuel buses and retrofit of 1994 to 2006 model year diesel school buses with particulate traps owned by public school districts and private contractors. The PA will close on June 5, 2015, after a three-month application period. Funding will be provided from the Carl Moyer Program AB 923 Fund (80), and the final funding amount will be recommended at the time of Board approval for the proposed awards. Depending on the number of applications received, all the requests may not be funded in their entirety.

For replacement of pre-1994 school buses with alternative fuel buses, public schools will be required to provide match funds in the amount of \$15,000 for a CNG bus and \$10,000 for a propane bus. The SCAQMD will fund the remaining balance of the base price of the bus, in addition to sales tax and the optional fire suppressant system. School districts will have to pay for any additional discretionary options that they may choose to include on the bus. Furthermore, up to \$14,000 per CNG and \$5,000 per propane bus will be provided for fueling infrastructure. School districts cannot opt to use the funding provided for infrastructure to reduce their local match.

For retrofit of diesel school buses, up to \$20,000 per bus will be provided for CARB-approved Level 3 particulate traps. This should cover the entire cost of the purchase and installation price of the particulate trap, with some additional funds available for cleaning and maintenance.

## **Outreach**

In accordance with SCAQMD's Procurement Policy and Procedure, a public notice advertising the RFP/RFQ and inviting bids will be published in the Los Angeles Times, the Orange County Register, the San Bernardino Sun, and Riverside County's Press Enterprise newspapers to leverage the most cost-effective method of outreach to the South Coast Basin.

Additionally, potential bidders may be notified utilizing SCAQMD's own electronic listing of certified minority vendors. Notice of the RFP/RFQ will be emailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associations, and placed on the Internet at SCAQMD's website (<http://www.aqmd.gov>) where it can be viewed by making the selection "Grants & Bids."

## **Benefits to SCAQMD**

The successful implementation of the Lower-Emission School Bus Replacement and Retrofit Program will ensure less polluting and safer school transportation for school children and will reduce public exposure to toxic diesel particulate matter emissions.

**Resource Impacts**

Funding for the Lower-Emission School Bus Replacement and Retrofit Program will be provided from the Carl Moyer Program AB 923 Fund (80) and the funding amount will be recommended at the time of Board approval for the proposed awards.

**Attachment**

Program Announcement #PA2015-06 for School Bus Replacements and Retrofits

# **Attachment 1**

## ***Announcing South Coast Air Quality Management District's Lower-Emission School Bus Replacement and PM Trap Retrofit Funding Program***

### **PART A**

***New Alternative Fuel School Bus Program  
To Replace School Buses 1993 and Older  
(Eligibility restricted to public school districts)***

### **PART B**

***PM Trap (Level 3) Filters  
(both public school districts and private operators are eligible)***

**Program Announcement & Application  
#PA2015-06**

***March 6, 2015***

**Depending upon the number of applications received and availability of funding, the SCAQMD Board retains discretion to make full awards, partial awards, or no awards at all under this Program Announcement. If the choice to make a partial award causes any bidder to withdraw, the funds that would have been awarded to that bidder will be re-allocated to the other bidders or allocated pursuant to a new program announcement. SCAQMD also reserves the right to change any criteria such as the schedule, qualifications, grant provisions and selection criteria outlined in this Program Announcement & Application.**



**March 6, 2015**

The South Coast Air Quality Management District (SCAQMD) is pleased to announce another round of funding opportunity for the implementation of the “Lower-Emission School Bus Program” in the South Coast Air Basin. This program, which supplements earlier programs, is designed to assist school districts and private operators to purchase alternative fuel clean school buses and to retrofit school buses with PM trap filters.

Since 2001, when the Lower-Emission School Bus Program began, SCAQMD has awarded nearly \$250 million in state and local funds to: replace 1,400 highly polluting old school buses with clean alternative fuel, primarily CNG, buses and retrofit 3,400 diesel school buses with PM traps.

Since the program’s inception in 2001, SCAQMD has been replacing pre-1994 school buses (i.e. 1993 and older) with clean new school buses. SCAQMD is seeking applications from public school districts to replace pre-1994 school buses that weigh over 14,000 lbs Gross Vehicle Weight (GVW). SCAQMD will first replace any remaining pre-1987 buses in the fleets.

Funds for the new School Bus Program will be provided from the Carl Moyer Program AB923 Fund (AB923 fund). The final funding amount will be recommended at the time of SCAQMD Board approval for the proposed awards. Depending on the number of applications received, all the requests may not be funded in their entirety. In the application, school districts are requested to list their pre-1994 buses in their preferred priority order for replacement, either by accumulated mileage, age or maintenance track record. Given that funds may be limited, pre-1994 buses may be replaced in phases. Applicants are encouraged to list their oldest buses first and/or buses with the highest cumulative mileages.

Also with the application, applicants need to submit two Excel sheets electronically (to [rgeorge@aqmd.gov](mailto:rgeorge@aqmd.gov)):

- a) the details of the pre-1994 school buses to be replaced
- b) details of all the remaining school buses in the fleet inventory, irrespective of model year (make, model year, fuel type, VIN#, license plate #, engine make, model year, accumulated mileage, average annual mileage etc.) Diesel buses, within 1994 to 2006 model years (inclusive), that have PM traps and that lack PM traps, need to be identified as well.

The **Program Announcement** (PA) application deadline is 5:00 p.m. Friday, June 5, 2015. This PA consists of two key parts:

**PART A - School Bus Replacement Program**

- Availability of SCAQMD’s AB 923 funds to replace pre-1994 school buses (greater than 14,000 GVW) with alternative fuel school buses. Pre-1987 school buses will be replaced first.

## **PART B - School Bus Retrofit Program**

- Availability of AB 923 funds for the retrofit of 1994 - 2006 diesel buses with Level 3 PM trap filters.

### **Part A:**

#### **Highlights of the School Bus Replacement Program**

##### **a) Replace pre-1994 school buses**

Applicants have to agree to crush a pre-1994 school bus weighing over 14,000 GVWR. Only public school districts and joint power authorities are eligible to apply. For each bus being requested for replacement, school districts must provide the annual CHP292 from year 2010 to present.

In the application, school districts are requested to list their pre-1994 buses in their preferred priority order for replacement, by accumulated mileage, age or maintenance issues. The worst performing pre-1994 buses should be listed first.

For replacement of pre-1994 school buses with alternative fuel buses, public school districts will be required to provide match funding in the amount of \$15,000 for a CNG and \$10,000 for a propane bus. The SCAQMD will fund the remaining balance of the base price of the bus, in addition to sales tax and the optional fire suppressant system. School districts will also have to pay for any additional discretionary options that they may choose to include on the bus. Furthermore, up to \$14,000 per CNG and \$5,000 per propane bus will be provided for fueling infrastructure. However, funding provided for infrastructure cannot be used to reduce a school district's local match in instances where the infrastructure funds are not needed.

Schools need to include the latest CARB Executive Order (1 page) for the bus engine being ordered, and specify which piggy-back bid was used to order the new bus (Waterford, Hemet or equivalent). Schools need to operate these new school buses for a minimum of fifteen (15) years from the date of CHP certification.

Please see PART A of this Program Announcement for further details of the Program, procedures to apply and the application forms. The original plus three copies of the application must be received by SCAQMD no later than 5:00 p.m. Friday, June 5, 2015. Before this deadline, two Excel sheets are also needed (one with the details of the pre-1994 buses being replaced and the other with details of the remaining school buses in the fleet).

**Part B:**  
**Highlights of the School Bus Retrofit Program**  
**b) Funds for PM Trap Level 3 filters**

SCAQMD will administer this Program to retrofit 1994 - 2006 diesel buses with CARB verified Level 3 PM trap filters. Both public school districts and private operators are eligible to apply:

- Funds will be provided to cover all or a substantial portion of the cost of purchase, sales tax, and installation of either an active or passive PM trap filter.
- For active filters, funds will also be provided to cover electrical infrastructure.
- A maximum of up to \$2,500 per trap will be available for lifetime PM trap maintenance.
- Up to \$250 will be provided, whenever data-logging is mandatory for certain CARB-verified level 3 filters.
- To establish eligibility for SCAQMD funds, during the application process, private transport contractors need to provide copies of their agreements with public school districts to transport their students. Digital copies (attention: Ranji George) are acceptable.

Award recipients are required to operate the school buses with the PM trap retrofits within the South Coast Air Basin for a minimum of five years following the date of PM trap installation.

Should you have any questions regarding this Program Announcement, please contact:

- Ranji S. George, Program Supervisor, at (909) 396-3255  
Email: rgeorge@aqmd.gov.

The program announcement and application document #PA2015-06 can also be accessed via the Internet by visiting SCAQMD's website at [www.aqmd.gov/grants-bids](http://www.aqmd.gov/grants-bids).

**SB 854 provisions on Prevailing Wages (NEW)**

Recent state legislation SB 854 (<http://www.dir.ca.gov/Public-Works/SB854.html>) requires all contractors, before they can accept funds from a public agency, to register with the Department of Industrial Relations (DIR). SCAQMD grant provisions will be amended to include the following:

**PREVAILING WAGES** – CONTRACTOR is alerted to the prevailing wage requirements of California Labor Code section 1770 et seq., and the compliance monitoring and enforcement of such requirements by the Department of Industrial Relations (“DIR”). CONTRACTOR and all of CONTRACTOR’s subcontractors must comply with the California Public Works Contractor Registration Program and must be registered with the DIR to participate in public works projects. CONTRACTOR shall be responsible for determining the applicability of the provisions of California Labor Code and complying with the same, including,

without limitation, obtaining from the Director of the Department of Industrial Relations the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work, making the same available to any interested party upon request, paying any applicable prevailing rates, posting copies thereof at the job site and flowing all applicable prevailing wage rate requirements to its subcontractors. Proof of compliance with these requirements must be provided to SCAQMD upon request. CONTRACTOR shall indemnify, defend and hold harmless the South Coast Air Quality Management District against any and all claims, demands, damages, defense costs or liabilities based on failure to adhere to the above referenced statutes.

For additional Prevailing Wage requirements, applicants are encouraged to visit the DIR website: [www.dir.ca.gov/PublicWorks/PublicWorks.html](http://www.dir.ca.gov/PublicWorks/PublicWorks.html)

Our main objective is to reduce children's exposure to harmful emissions from diesel school buses. We look forward to receiving your application.

## **ATTACHMENTS**

**PART A:** Application Form and Procedures to Apply for School Bus Replacement Funds

**PART B:** Application Form and Procedures to Apply for School Bus Retrofit Funds

## **CERTIFICATIONS AND REPRESENTATIONS:**

- All applicants need to fill in the campaign disclosure forms
- All Applicants need to provide updated Business Contact Information
- New Applicants need to fill in the Taxpayer ID information

# **PART A**

## ***New Alternative Fuel School Buses to Replace Pre-1994 School Buses***

***(Only Public School Districts and Joint Power  
Authorities are eligible to apply)***

**#PA2015-06**

***March 6, 2015***

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***I.A. PROGRAM INTRODUCTION***

In earlier rounds of funding, using a combination of state and its own funds totaling nearly \$250 million, SCAQMD has replaced over 1,400 older diesel buses with new alternative fuel bus, primarily CNG, and has retrofitted nearly 3,400 diesel buses with PM traps. Over 50 percent of these funds have been awarded to school districts located in disproportionately impacted areas.

**Funding Available for School Bus Replacement**

**Background**

Under this Program Announcement, SCAQMD is making its own AB 923 funds available for replacement of pre-1994 school buses with alternative fuel new school buses. Only public school districts and joint power authorities are eligible to apply under this program

For replacement of pre-1994 school buses with alternative fuel buses, public schools will be required to provide match funds in the amount of \$15,000 for a CNG and \$10,000 for a propane bus. The SCAQMD will fund the remaining balance of the base price of the bus, in addition to sales tax and the optional fire suppressant system. School districts will also have to pay for any additional discretionary options that they may choose to include on the bus.

Furthermore, up to \$14,000 per CNG and \$5,000 per propane bus will be provided for fueling infrastructure. Funding provided for infrastructure cannot be used to reduce a school district's local match in cases where the infrastructure funds are not needed.

Emission Limits

- The new alternative fuel school bus must be certified to an emission limit of 0.2 g/bhp-hr (NMHC and NOx) and 0.01 g/bhp-hr for PM.

***I.B. PROGRAM SCHEDULE***

The implementation schedule is outlined below.

**Tentative Schedule for School Bus Replacement Program**

March 6, 2015 (Friday)	Issue the Program Announcement & Application #PA2015-06.
June 5, 2015 (Friday)	<b>Applications due by 5 p.m. for school bus replacements and retrofits.</b> Applicants are encouraged to apply well before this deadline.
October 2, 2015 (Friday)	SCAQMD Board to consider approval of the school bus replacement awards.

February 15, 2016	All school bus orders must be placed with vendors by school districts. Copies of vendor quotes and purchase orders faxed to SCAQMD (attn. Ms. Lily Garcia, fax (909-396-3774).
September 30, 2016	New buses delivered and CNG infrastructure completed.
November 15, 2016	All requests for reimbursement submitted by school districts, along with evidence of bus crushed.

***I.C. APPLICATION SUBMITTAL***

The applicant shall submit **four copies** (1 original and 3 copies) of the application, each marked **“Program Application #PA2015-06 (Part A).”** These four copies should be placed together in a sealed envelope, plainly marked in the upper left-hand corner with the name and address of the applicant, **no later than 5:00 p.m., Friday, June 5, 2015.**

The application package must be addressed to:

Mr. Dean D. Hughbanks, Procurement Manager  
**Re: “Program Application #PA2015-06**  
**School Bus Replacement**  
 South Coast Air Quality Management District  
 21865 Copley Drive  
 Diamond Bar, CA 91765

All the school bus replacement applications must be **signed by the school’s superintendent.**

***I.D. PARTICIPATION GUIDELINES, REQUIREMENTS, & CONDITIONS***

***GRANT PROVISIONS FOR SCHOOL BUS REPLACEMENT & INFRASTRUCTURE***

***A. School Bus Replacement Criteria Overview***

1. Only public school districts within the jurisdiction of the SCAQMD that own and operate school buses, including under provisions of a joint powers authority, can apply for funding. The program is for replacement of:
  - pre-1994 school buses with new alternative fuel buses; and
  - pre-1994 school buses to be replaced must have continuous CHP certification from 2010 onwards.

All the replaced and the new replacement buses must have a manufacturer gross vehicular weight rating (GVWR) of greater than 14,000 pounds and be powered by a heavy-duty engine (CARB classification).



2. Only replacement buses will be funded. Fleet expansion buses (that fail to crush an existing school bus) will not be eligible for funding.
3. Only alternative fuel engines that meet the following emission criteria will be eligible for funding
  - 0.2 g/bhp-hr NMHC + NO<sub>x</sub> or lower, and 0.01 g/bhp-hr PM or lower.
4. Availability of alternative fuels to refuel the newly acquired buses shall be documented. The school district can apply for fueling infrastructure funds. If awarded, school districts are eligible up to an additional ten percent of the bus award, and in the case of CNG buses, not exceeding \$14,000 per CNG bus, or \$5,000 per new propane bus awarded from AB923 funds. These infrastructure funds cannot be used to reduce the school district's local match requirement.
5. Priority shall be given to replacement of the oldest buses from the group of buses applied for the Program. Pre-1987 buses will be replaced first.
6. Only pre-1994 school buses with continuously certified CHP certificates since 2010 are eligible for replacement.
7. All pre-1994 school buses proposed for replacement must be in current use. These buses must have a CHP certificate valid as of December 31, 2010, and continuously thereafter, and a valid, verifiable DMV license. The application form calls for specific information related to the replaced bus. Additional information may be required as evidence that these buses are in operation. If there is a break in documentation, please inform the SCAQMD's Program Supervisor Ranji George ([rgeorge@aqmd.gov](mailto:rgeorge@aqmd.gov)).
8. Complete documents pertaining to the replaced bus, new bus purchase, vendor quotes, and proof of crushing must be kept in files for a period of seven (7) years after the date of removal of the existing bus. Access to these files, and personnel involved in the transactions, should be allowed in the event of an audit from either state or local authorities.
9. Schools need to include the latest CARB Executive Order (1 page) for the bus engine being ordered and specify which piggy-back bid was used to order the new bus (Waterford, Hemet or equivalent).
10. With the application, applicants must include a print-out of the current fleet composition with details of every bus and its engine currently operating in its fleet (make, model year, fuel type, VIN#, license plate #, engine make, model year, accumulated mileage, average annual mileage etc.) Diesel buses, within 1994 to 2006 model years (inclusive), that have PM traps and that lack PM traps, need to be identified as well. Additionally, an Excel version of the fleet composition should be sent directly to the Ranji George at [rgeorge@aqmd.gov](mailto:rgeorge@aqmd.gov).

## ***B. Infrastructure Criteria Overview***

1. If funds for CNG infrastructure are required, the applicant must make such request, and provide justification for the funds requested.
2. Requested funds should offset the cost of procuring new slow-fill alternative-fuel refueling equipment or expanding the capacity of an existing refueling station.
3. New capacity requested will be directly related to the capacity needed by the new CNG buses awarded through this program.
4. Upon approval, funding may be used to purchase slow-fill equipment or used to buy down the cost of a public access fast-fill facility based on estimated cost of slow-fill capacity needed for the new buses.

## ***FUNDING ALLOCATIONS***

### ***A. Amounts of Funding***

1. Public school districts can use any legally valid piggy-back bid in the State of California to purchase new CNG buses. Examples include, but are not restricted to, the Waterford and Hemet bids. Funding requested for purchase of a bus shall be consistent with the prices on the legally valid piggy-back bid. With the exception of the alternative fuel option, and onboard fire-suppressant system or gas detector system, the applicant is responsible for the cost of any options not included in the prices on the list.
2. SCAQMD will first deduct the school match requirement, and then pay the difference between the retail price of the school bus, including sales tax as agreed upon by the SCAQMD.
3. SCAQMD will cover the cost of the optional fire suppression system and/or gas methane detector for a combined total of \$4,500 per bus.
4. The basis for the amount of funding requested for purchase of alternative-fuel refueling infrastructure shall be documented in the application. Amounts requested for funding shall be based on the cost of slow-fill stations. Awards shall not exceed \$14,000 per new CNG bus awarded, or \$5,000 per new propane bus awarded. These amounts will be paid through AB 923 funds.

### ***B. Matching Fund Requirement***

1. For replacement of 1993 and older model year in-use school buses, applicants shall provide local cost-share/match funds in the amount of \$15,000 per CNG bus and \$10,000 per propane bus. This required cost-share cannot be offset using infrastructure funds.
2. The applicant shall have its fueling infrastructure funds for the purchase, upgrade, installation and operation of the alternative-fuel refueling infrastructure.
3. The source of match funding for bus purchases and infrastructure shall be documented and attached to this application. If other grant funds are being used as match funding, detailed information on required use of those funds shall be included.
4. Carl Moyer Program funds may not be used as match funding to purchase new buses.

### ***C. Authorizing Signature***

The submitted school bus replacement application, and its 3 copies, shall have the school district's superintendent's signature. Applications without authorizing signatures will not be accepted.

### ***D. Disbursement of Funds***

1. Following receipt of the grant award from SCAQMD, the school district must provide a copy of the grant agreement and key attachments to the selected vendor(s). Per the provisions of the grant, a purchase order shall be placed without delay to allow for the prompt delivery of the buses.
2. Funds will be paid on a reimbursement basis to the vendor, following the delivery of the new school bus(es) to the applicant.
3. Vendors should be encouraged to directly invoice SCAQMD for SCAQMD's share of funds. Applicants shall cooperate fully with the vendor to provide the vendor the various documents SCAQMD would need before reimbursing the vendor. These documents are listed in the grant agreement.
4. All buses must be physically delivered to the customer by **September 30, 2016**.
5. Proof of vehicle delivery and supporting documents, as required in the grant, must accompany any request for reimbursement of approved funds. School district must identify any options purchased over and above those included in the base price, and alternative fuel option. Besides the fire suppression and/or gas detection systems, for which SCAQMD will pay up to \$4,500, other discretionary options must be paid by the

school district. The receipt of vehicle should be signed by the Director of Transportation before submission to SCAQMD.

6. All requests for reimbursement along with proof of crushing must be received by **November 15, 2016**. Monies owed will be paid directly to the bus vendor.
7. Funds will be paid on a reimbursement basis at the time of completion of the alternative-fuel refueling facility. CNG infrastructure must be completed by **September 30, 2016**. Proof of completion shall accompany any request for reimbursement of approved funds. All requests for reimbursement must be signed by the transportation director and received by SCAQMD on or before **November 15, 2016**. Monies owed will be paid directly to the infrastructure provider.

## ***PROJECT IMPLEMENTATION***

### ***A. Preferred List of School Bus Replacement***

Applicants are encouraged to list their pre-1994 buses in order of applicant preference. If a priority list is not indicated, from the pool of buses requested for replacement by an applicant, either the oldest buses or the buses with highest cumulative mileage will be replaced first.

### ***B. Project Completion Deadlines and Penalties***

1. School bus purchase orders must be placed no later than February 15, 2016.
2. New buses must be delivered no later than September 30, 2016. The business entity responsible for delaying the delivering of the buses may be subject to \$100 per day per bus penalty for buses delivered after September 30, 2016.
3. All requests for reimbursement for purchases submitted by school districts, along with evidence of bus crushed, and other documentation, should be submitted to SCAQMD by November 15, 2016.

### ***C. Monitoring and Reporting***

1. School districts must notify the SCAQMD's Technology Advancement Office when the funded buses are ordered and again when the buses arrive on site. Prior to reimbursement, an inspection by SCAQMD may be required.
2. School districts must notify the SCAQMD's Technology Advancement Office when any equipment is ordered for the refueling station, and when the equipment is operating. Prior to, or following reimbursement, an inspection by SCAQMD may be required.

***I.E. IF YOU NEED HELP***

This Program Announcement and Application can be obtained by accessing the SCAQMD website at [www.aqmd.gov/grants-bids](http://www.aqmd.gov/grants-bids). SCAQMD staff members are available to answer questions during the application acceptance period. In order to help expedite assistance, please direct your inquiries to the applicable staff person, as follows:

- For **General, Administrative, or Technical Assistance**, please contact:

**Ranji S. George**  
Program Supervisor  
Technology Advancement Office  
Phone 909-396-3255  
Fax: 909-396-3252  
[rgeorge@aqmd.gov](mailto:rgeorge@aqmd.gov)

- For **Questions on Invoices and Contracts**, please contact:

**Drue Hargis**  
Senior Public Information Specialist  
Technology Advancement Office  
Phone: 909-396-3237  
Fax: 909-396-3774  
[dhargis@aqmd.gov](mailto:dhargis@aqmd.gov)

**Lily Garcia,**  
Technology Advancement Office  
Phone: 909-396-2832  
Fax: 909-396-3252  
[lgarcia1@aqmd.gov](mailto:lgarcia1@aqmd.gov)

**Appendix A**

**Lower-Emission School Bus Program**

**APPLICATION FOR LOWER-EMISSION SCHOOL BUS REPLACEMENT AND  
INFRASTRUCTURE GRANT**

**Fiscal Year 2014-2015**

**#PA2015-06 – (Part A)**

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**GRANT APPLICATION FORM FOR THE  
LOWER-EMISSION SCHOOL BUS REPLACEMENT PROGRAM  
Program Announcement #PA2015-06**

(Please return signed application with next 4 pages filled out)

School District: \_\_\_\_\_

Street Address: \_\_\_\_\_

City: \_\_\_\_\_ County: \_\_\_\_\_ State: CA. Zip Code: \_\_\_\_\_

School District Primary Contact Person: \_\_\_\_\_

Name/Title: \_\_\_\_\_

Phone No.: \_\_\_\_\_ Ext: \_\_\_\_\_ Fax: No.: \_\_\_\_\_

Email (please print): \_\_\_\_\_

Alternative Contact (name, title, phone, email address – please print)

\_\_\_\_\_

# of Buses Requested \_\_\_\_\_

Bus Replacement Funds Amount Requested \_\_\_\_\_

Matching Funds Amount: \_\_\_\_\_

Sources of School District Matching Funds (please list by amount):

\_\_\_\_\_

*Documentation must be attached to this application explaining the source of match funds, and the need for CNG infrastructure funds. An authorizing resolution from the school board approving the match funds must be attached. If the resolution is not available at the time of the application submission, it should be sent to the program supervisor within 2 months the application submittal.*

Fueling Infrastructure Funds Amount Requested: \_\_\_\_\_

# of CNG buses owned and currently operated by School District: \_\_\_\_\_

If not on premise, identify the nearest refueling facility and one-way distance to the facility: \_\_\_\_\_

Superintendent's Signature: \_\_\_\_\_

Name of School Official (please print): \_\_\_\_\_ Date Signed \_\_\_\_\_



*INFORMATION ON EXISTING BUSES TO BE REPLACED*

- List only pre-1994 Buses (1993 or older) with GVWR above 14,000 lbs
- For each bus, please include CHP 292 from 2010 onwards to present (or alternatively, CHP 343As).
- Please list these pre1994 buses in your preferred order of priority for replacement: the least desirable buses first (either by accumulated mileage, or age or maintenance issues)

<b>Bus ID No.</b>	<b>Make, Model, Year of pre-1994 bus</b>	<b>VIN No.</b>	<b>GVWR (must be at least 14,000 lbs)</b>	<b>Odometer Mileage</b>	<b>Engine Make &amp; Model, Year</b>	<b>DMV License Plate</b>	<b>CHP 292/343 from 2010 onwards? (Yes/No)*</b>

\*Attach CHP 292 certificates for each bus listed above. CHP certificate for each bus must be continuously valid since 2010 onwards to present (Attach a note, if there is any problem or an issue we need to address.). Without CHP certificates, application will not be processed.

- With the application, a copy of the school board resolution authorizing submittal of the application and identifying the individual authorized to implement the school bus replacement project
- For each pre-1994 bus listed above, please include the following in the application package:
  - DMV Registration
  - DMV Title
  - CHP292s for year 2010 to present.
  - (Alternatively, CHP 343A that confirms that the bus passed CHP inspection for that year)
  - Clear photo of the data label tag of the bus confirming VIN# and GVWR of the bus
  - Clear photo of the Engine Label
- If we replace the above pre-1994 buses, are there any remaining pre-1994 buses in the fleet (with over 14,000 pounds GVWR)? Yes/No
- If yes, how many pre-1994 buses left?
- Total number of 1994 and newer diesel buses in the fleet                                     
  - # of buses with Level 3 PM traps (1994 and newer)
  - # of buses without Level 3 PM traps (1994 and newer)
- Total number of CNG buses in the fleet
- Do you have CNG refueling site at your facility?                      Yes/No
- Fleet Inventory: Please provide details of each school bus that remain in School District fleet in an Excel worksheet. Please include details of each bus (make, model, manufacturer, passenger capacity, engine make, model, year, fuel type, VIN#, license plate, accumulate mileage) . For 1994 and newer models, please identify which diesel buses have Level 3 PM traps and which do not. Please print this Excel worksheet and attach to application, and send an electronic version to Ranji George at [rgeorge@aqmd.gov](mailto:rgeorge@aqmd.gov).

**INFORMATION ON NEW BUSES  
PROPOSED TO BE PURCHASED**

**(Please include ARB Executive Order of the Bus Engine being purchased)**

(Purchase and sales information of the new buses must be from a legally valid piggy-back bid)

<b>Name of Vendor</b>	<b>Final Price quoted by Vendor (inclusive of sales tax)*</b>	<b>Make</b>	<b>Model</b>	<b>Year</b>	<b>GVWR</b>	<b># of Passengers</b>

\*Please identify the piggy-back bid used to order the above. Also, identify any discretionary options being purchased by the school district. Besides the fire suppressant or gas detector, and the CNG package, SCAQMD will not pay for any discretionary option above those included as standard in the base bid.

Please document availability of CNG refueling station for the new bus purchases:

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**FUEL INFRASTRUCTURE GRANT APPLICATION (#PA2015-06)**

Please answer all questions below. If non-applicable, write N/A.

Amount of funds requested: \_\_\_\_\_

Number of new CNG school buses applied for: \_\_\_\_\_

Number of CNG buses presently on site: \_\_\_\_\_

The requested funds will be used for (please circle one):

New Facility / Upgrade Existing Facility

Local Gas Utility Company

\_\_\_\_\_

Distance (miles) to nearest off-site CNG Fueling Station: \_\_\_\_\_

Please attach a statement of reasons why it is not feasible to refuel at an off-site fueling station.

Existing fueling station:

Actual size of on-site CNG compressor, if any (In CFM) \_\_\_\_\_

CNG Fuel Storage Capacity if any: \_\_\_\_\_

Actual number of CNG Fueling Posts (two hoses/post): \_\_\_\_\_

Natural Gas Pressure at Main (PSIG): \_\_\_\_\_

Is this station accessible to the public?      YES   /   NO

New fueling station:

CFM capacity needed for additional buses: \_\_\_\_\_

Number of CNG Fueling Posts needed (two hoses/post): \_\_\_\_\_

Will this station be accessible to the public?      YES   /   NO

**South Coast  
Air Quality Management District**

SAMPLE GRANT FOR NEW BUS AWARD (not to be returned with application)

**Sample Provisions. SCAQMD reserves the right to amend these provisions.**

**GRANT AWARD & AUTHORIZATION FORM  
Lower-Emission School Bus Replacement Funding Program  
Pursuant to Program Announcement #PA2015-06**

Your grant application, to replace pre-1994 buses with new buses, has been approved for funding by the South Coast Air Quality Management District ("SCAQMD") Governing Board. A summary of the grant provisions are listed below:

<b>GRANTEE</b>	
Grant Number	
Number of CNG School Buses Awarded	
Required School Match for Above Buses (at \$15,000 per pre-1994 bus replaced)*	
a. Total School Bus Replacement Grant Award	
b. Total Award for Installing Fire- Suppression Systems and/or Methane Detection System (with a maximum of \$4,500 per bus)	
c. Total Infrastructure Grant Award	
Maximum SCAQMD Award (a+b+c+d)	
Source of Funding	<i>Fund 80/AB 923</i>
Deadline for Physical Delivery of All Buses	<b>Not later than September 30, 2016</b>
Deadline for the Installation of the Alternative Fuel Station	<b>Not later than September 30, 2016</b>
Agreement Term with SCAQMD	<b>December 30, 2021</b>
Date to which School District must own and operate the new bus received under this Program	<b>At minimum, to December 30, 2031</b>
Date to Which All Records (relating to this Grant) Need to be Retained	<b>December 30, 2033</b>

1. PARTIES - The parties to this Grant Award Agreement ("Agreement") are the South Coast Air Quality Management District ("SCAQMD") whose address is 21865 Copley Drive, Diamond Bar, California 91765-4178, and School District ("GRANTEE") whose address \_\_\_\_\_

2. AGREEMENT TERM – The term of this Agreement is from the date of execution by both parties through **December 30, 2031**, unless further extended by amendment of this Agreement in writing. No work shall commence until this Agreement is fully executed by all parties. The project must comply with the 2008 California Air Resources Board's (ARB) Lower-Emission School Bus Program Guidelines, dated April 15, 2008, including associated Advisories/Mailouts (subsequent revisions to the Guidelines), and must meet all program requirements for the full term of this Agreement. Inclusive of the Agreement term, there are two timeframes: A) **Project Completion**, which is from the date of grant execution to the date the last new school bus has been ordered, delivered and placed into operation; and B) **Project Implementation**, which is from the date the final invoice has been paid until the end date of this Agreement.
  
3. ADDITIONAL TERMS –To receive funds pursuant to this Grant, GRANTEE must comply with all of the following terms and conditions including those set forth in the following documents, which are attached and incorporated as part of this Grant.
  - a. Information on the CNG bus(es) to be purchased (**Attachment A-1**);
  - b. List of pre-1994 school buses that must be crushed and permanently removed (**Attachment B-1**);
  - c. Reporting Data on Old and New School Buses, replaced and purchased under this Funding Program (Excel format) (**Attachment C-1**);
  - d. Lower-Emission School Bus Replacement and PM Trap Retrofit Funding Program Announcement and Application #PA2015-06 dated March 6, 2015 (Attachment D); and
  - e. 2008 ARB Lower-Emission School Bus Guidelines, dated April 15, 2008, and associated Advisories/Mailouts, which are available at the following ARB web link:  
<http://arb.ca.gov/bonds/schoolbus/schoolbus.htm>.

In addition to the terms and agreements in this Grant and above, if a document was required as part of the application as specified by the Program Announcement, and has not yet been provided by GRANTEE to the SCAQMD, GRANTEE must provide such prior to grant execution.

4. PROVIDE VENDOR COPY OF GRANT - Copies of this Agreement must be provided to the vendor(s) selected to provide new CNG bus(es) and to vendor(s) selected to provide and/or install alternative fuel infrastructure. This will, among other elements, enable the vendor to assist GRANTEE in complying with the terms and conditions of this Grant.
  
5. VENDOR TO DIRECTLY BILL SCAQMD - SCAQMD prefers that each vendor bill SCAQMD directly for alternative fuel bus(es) delivered and alternative fuel station installed pursuant to this Agreement. GRANTEE is discouraged from paying the vendor directly, but if it does the GRANTEE must submit copies of the front and back of all cancelled check(s) paid to vendor along with all the required documentation listed in Clause 11 below (for buses) and/or Clause 16 (for alternative fuel infrastructure).
  
6. PROJECT MILESTONES – GRANTEE must achieve the following milestones under this Agreement:
  - a. Issue purchase order (PO) to purchase new bus(es) by **February 15, 2016**;
  - b. Have all new buses delivered by vendor to GRANTEE no later than **September 30, 2016**;
  - c. Ensure that the new CNG bus(es) comply with the NO<sub>x</sub> and PM certification standards listed in the 2008 ARB Lower-Emission School Bus Guidelines and/or Advisories/Mailouts (**see Attachment A-1**);
  - d. Crush and permanently remove one pre-1994 school bus listed in **Attachment B-1** for every new bus purchased, within three weeks of receiving the new CNG and propane bus(es);
  - e. For reimbursement for new buses, vendor to submit invoice, along with required documentation from GRANTEE, to SCAQMD no later than **November 15, 2016** (see Clause 11 below for required documents to accompany new school bus invoice);

- f. Install Alternative Fuel Station or complete upgrades to existing station no later than **September 30, 2016**, if applicable;
  - g. For reimbursement for alternative fuel infrastructure, vendor to submit invoice along with required documentation to SCAQMD no later than **December 15, 2016** (see Clause 16 below for required documents to accompany infrastructure invoice);
7. **PURCHASE ORDER & PENALTIES** - GRANTEE must place purchase orders for the new bus(es) no later than **February 15, 2016**. Prior to its issuance, a copy of the purchase order from GRANTEE to the school bus vendor (and if applicable to the alternative fuel station installer) must be faxed to Ms. Lily Garcia at fax number (909) 396-3774 (or sent via email to [lgarcia1@aqmd.gov](mailto:lgarcia1@aqmd.gov)) no later than **February 5, 2016**. Per CARB guidelines, a provision shall be explicitly included in the purchase order stating: "A withhold of \$100 per bus per day will be imposed on the vendor by the SCAQMD for each day and each bus that is delivered after **September 30, 2016**.- to the GRANTEE." In addition, the purchase order shall include the following clause: "Bus vendor shall invoice SCAQMD directly for GRANTEE's award."
8. **CRUSHING CERTIFICATE AND REQUIREMENTS** - Within three (3) weeks of physically receiving the new bus(es), GRANTEE shall select a crushing company, pre-approved by SCAQMD in writing, to permanently remove its pre-1994 school bus(es), as listed in **Attachment B**. The terms "crush" and "dismantle" are interchangeable and are defined as "to punch, crush, stamp, hammer, shred, or otherwise render permanently and irreversibly incapable of functioning as originally intended, any vehicle or vehicle part". The crushing company must issue a **crush certificate**, signed and dated by the company, which includes the following: a) confirmation that the pre-1994 bus(es) has been permanently destroyed; b) statement that the method used to dismantle the non-engine portion of the bus, the engine and power-train complies with the definition of dismantle as defined in this clause, including affirmation that the crushed buses had a 4-inch hole cut into the engine block, and date dismantled; and c) the **Engine Serial Number** and **VIN** of the bus(es). For the crushed buses, GRANTEE must also provide clear photographs of each destroyed engine and vehicle.
9. **PAYMENT TERMS** - Up to the amounts specified in the above table, SCAQMD will pay for new alternative-fueled school buses acquired through a legally valid competitive bid in California, in an amount not exceeding the base price (covering listed base options), the cost of the CNG/ propane option and sales tax, less GRANTEE's required match amount. To prevent delays in payment, within three weeks of physically receiving the new bus(es) from the vendor, GRANTEE agrees to permanently remove its pre-1994 buses, as listed in Attachment B, and as listed in **Clause 11 below** provide all the required documentation to the bus vendor for invoice processing.
10. **ADDITIONAL SAFETY OPTION PAID.** SCAQMD requires installation of safety system, i.e. either a methane detection system and/or a fire-suppression system on each alternatively fueled bus. If installed at time of purchase, SCAQMD will pay an additional \$4,500 per bus maximum for this option.
11. **DOCUMENTATION NEEDED FOR PAYMENT OF NEW BUS(ES)**  
GRANTEE shall coordinate with bus vendor to provide SCAQMD with the following documentation:
- a. **Original invoice** for each bus identifying:
    - i. details of each bus delivered including, but not limited to, the make, model year of the engine; bus make, model, year, vehicle identification number (VIN), passenger capacity, gross vehicle weight and wheel-chair capacity, if any;
    - ii. whether or not each bus has a fire-suppression and/or methane detection system;
    - iii. special options ordered by the school district over the base;
    - iv. alternative fuel package, sales tax and school district's contribution;
    - v. SCAQMD's contribution; and

- vi. engine and bus details for each crushed bus. These must include engine serial number, engine family, make, model year of the engine; and bus make, model, year, vehicle identification number (VIN), passenger capacity, gross vehicle weight, and wheel-chair capacity, if any.
  - b. **Cover letter** (an original) signed and dated by GRANTEE's Director of Transportation, or his/her equivalent, confirming, under penalty of perjury, the following:
    - i. details of the new buses delivered as listed in Clause (11)(a)( i) above;
    - ii. grant number to which the invoice should be charged;
    - iii. date when the bus was physically delivered to the school district;
    - iv. whether or not a methane detection and/or fire-suppression system was installed;
    - v. approval of the invoice and its contents;
    - vi. (new) whether CNG station funds will be used to reduce Grantee match requirements
    - vii. that SCAQMD should pay SCAQMD's contribution to the bus vendor directly; and
    - viii. that the school district will pay its contribution directly to the bus vendor.
  - c. **The latest CHP certificate(s)** for the permanently removed bus(es) indicating that these pre-1994 buses were operating since 2010 onwards to present.
  - d. **Certification from the crushing company** that the pre-1994 bus listed in Attachment B has been permanently removed. GRANTEE must ensure that the engine and power-train are irreversibly destroyed. **Engine Serial Number and VIN(s)** of the permanently removed bus(es) must be listed on the certificate. Prior to sending the bus for crushing, a clear picture of both the bus ID label and engine ID label must be taken and submitted to SCAQMD with invoice package.
  - e. A copy of the **first page** of this Grant Award (that contains the Summary Table) and **a copy of Attachment B** attached to this Grant Award (that lists the pre-1994 buses to be crushed) Identify and highlight the bus(es) listed in Attachment B that were permanently removed. VIN(s) and details of the permanently removed bus(es) submitted with the invoice and cover letter must match Attachment B.
  - f. The above documentation must be received by SCAQMD on or before **November 15, 2016**. Please submit these documents to the attention of Ms. Drue Ann Hargis, TAO, SCAQMD, 21865 Copley Drive, Diamond Bar, CA 91765.
  - g. Three electronic files to be sent to Mr. Ranji George that includes (a) an Excel File listing grant and old and new bus information required in Attachment C (Reporting Data on School Bus Replacements), (b) Electronic print-out of the Grantee's current fleet inventory, with details of each school bus in the fleet (see application in program announcement on required details) and (c) PDF scan of the whole invoice package,
12. **TERM OF OWNERSHIP** - GRANTEE (school district) is required to own and operate the newly acquired CNG buses within the South Coast Air Quality Management District for **at least fifteen years** from the date of physical delivery.
13. **RIGHT OF INSPECTION** – Before payment of invoice, SCAQMD and CARB reserve the right to inspect all school buses and alternative fuel infrastructure purchased and/or installed pursuant to this Agreement.
14. **ALTERNATIVE FUEL INFRASTRUCTURE** – SCAQMD requires the following:
  - a. that alternative fuel infrastructure be installed by a licensed contractor;
  - b. that the installing contractor have substantial direct experience in installing alternative fuel infrastructure;
  - c. that the alternative fuel infrastructure funded under this Agreement comply with all applicable laws, regulations and codes including, but not limited to, those pertaining to building, safety, fire, health, public contracting and public works, and with any local codes that may provide additional safety;
  - d. that a fire permit or equivalent certification be issued by a licensed engineer, a copy of which must be enclosed with the invoice for infrastructure;



- e. that the alternative fuel infrastructure construction must be completed by **September 30, 2016**, unless SCAQMD grants a written extension due to exceptional circumstances; and
  - f. that Grantee place an SCAQMD logo, as a permanent fixture, in a prominent location at their fueling station; the design and format of the SCAQMD logo will be provided by SCAQMD's program supervisor.
15. PREVAILING WAGES FOR INFRASTRUCTURE CONSTRUCTION. GRANTEE is alerted to the prevailing wage requirements of California Labor Code section 1770 et seq., and the compliance monitoring and enforcement of such requirements by the Department of Industrial Relations ("DIR"). GRANTEE and all of GRANTEE's subcontractors must comply with the California Public Works Contractor Registration Program and must be registered with the DIR to participate in public works projects. GRANTEE shall be responsible for determining the applicability of the provisions of California Labor Code and complying with the same, including, without limitation, obtaining from the Director of the Department of Industrial Relations the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work, making the same available to any interested party upon request, paying any applicable prevailing rates, posting copies thereof at the job site and flowing all applicable prevailing wage rate requirements to its subcontractors. Proof of compliance with these requirements must be provided to SCAQMD upon request. GRANTEE and GRANTEE's subcontractors shall indemnify, defend and hold harmless the South Coast Air Quality Management District against any and all claims, demands, damages, defense costs or liabilities based on failure to adhere to the above referenced statutes.
16. DOCUMENTATION NEEDED FOR PAYMENT FOR ALTERNATIVE FUEL INFRASTRUCTURE  
GRANTEE shall coordinate with all infrastructure contractors to provide SCAQMD with the following documentation:
- a. **An itemized invoice** (an original) must be submitted from the infrastructure contractor verifying installation, acceptance and operation of the alternative fuel refueling station. The invoice should include applicable details of the equipment installed (make, model, flow rate, horsepower capacity, inlet and outlet pressure, number of dispensing hoses, etc.), the cost of materials and labor, sales tax, warranties, and, if applicable, maintenance agreement.
  - b. **Evidence that a fire permit** or equivalent certification by a licensed engineer was issued for installation of the alternative fuel refueling station.
  - c. **Cover letter** (an original) signed and dated by GRANTEE's Director of Transportation, or his/her equivalent, confirming, under penalty of perjury, the following:
    - i. the invoice contents
    - ii. the grant number to which the invoice needs to be charged
    - iii. specific details of the work done
    - iv. date of completion of infrastructure construction
    - v. acceptance of the infrastructure construction
    - vi. that SCAQMD should pay SCAQMD's contribution to the vendor directly,
    - vii. that the school district will pay its contribution to the vendor directly; and
    - viii. that the SCAQMD logo has been permanently installed at the station.
  - d. **Copies of the bid documents**, if any, issued by GRANTEE (school district), responses to the bid, engineering drawings in 8.5 by 11 size, and photos of the final installation.
17. DEADLINE FOR ALTERNATIVE FUEL STATION DOCUMENTATION – Above documentation for CNG/propane station upgrades must be provided to SCAQMD no later than **December 15, 2016**. Please submit these documents to Ms. Drue Ann Hargis, TAO, SCAQMD, 21865 Copley Drive, Diamond Bar, CA 91765.
18. NON-COMPLIANCE – SCAQMD reserves the right to cancel this Agreement or withhold payment for GRANTEE's non-compliance with the Agreement. Further, SCAQMD reserves the right to cancel the Agreement if it is not executed by GRANTEE in a timely manner.

19. ENFORCEMENT – SCAQMD and CARB have the authority to enforce the terms of this Agreement at any time during the Agreement term plus two years. SCAQMD and CARB will seek whatever legal, equitable and other remedies are available for the GRANTEE's failure to comply with the terms of this Agreement or with the Lower-Emission School Bus Program requirements incorporated herein.
20. AUDIT RIGHTS – SCAQMD, CARB, and the California Department of Finance, or their designee(s), shall have the right to inspect the buses purchased under this Grant, alternative fuel station installed, and review and copy any records and supporting documentation pertaining to the performance of this Agreement. GRANTEE agrees to allow the auditor(s) access to these new buses, and records during normal business hours and to allow interviews of any employees who might reasonably have information related to such these buses and records.
21. AUDIT OF SUBCONTRACTORS - GRANTEE must include a similar right, as Clause 20 above, for the State and SCAQMD, or their designee(s), to audit records and interview staff in any subcontract related to the performance of this Agreement.
22. REPORTING REQUIREMENTS - During the term of this Agreement, GRANTEE agrees to provide periodic reports to SCAQMD on the implementation of this award, including but not limited to, entering detailed information in SCAQMD and/or ARB's School Bus database on each bus that is replaced and purchased under this Award, and on the alternative fueling station upgrades. GRANTEE will require its Vendor to cooperate in providing these reports. SCAQMD will specify the frequency and format of these reports.
23. RECORDS AND RECORDS RETENTION – GRANTEE shall maintain and retain records related to this Agreement for the Agreement term plus two years, or until **December 30, 2033**, whichever is later. These records shall be maintained in print form for the first seven (7) years of this Agreement but may be maintained electronically thereafter. These records include but are not limited to the following:
  - A. Application and all documents provided with and subsequent to the application submittal;
  - B. Clear, legible copy of a photograph of the data tag of the old bus to be replaced/crushed;
  - C. CHP certificates (**292 or 343A**) of the buses being crushed since year 2008 to the date of crushing;
  - D. A copy of the DMV registration and DMV Title of ownership of each new bus and old bus being crushed;
  - E. Vendor quotes for the new buses and station upgrades;
  - F. A copy of the ARB engine certification for the bus engines purchased under this Agreement;
  - G. Purchase orders for the buses and alternative fuel station upgrades;
  - H. Executed contracts;
  - I. Proof of crushing of the pre-1994 school buses including Form 42 and crushing certificate (refer to Clause 8);
  - J. Proof of delivery of the new replacement bus(es) and special options purchased and installed on the bus(es);
  - K. All invoice(s) related to the project including documents required for payment (refer to Clause 11);
  - L. If GRANTEE paid its vendor directly, GRANTEE must retain proof of payment; and
  - M. Maintenance records.
24. NON-COMPLIANCE – SCAQMD reserves the right to cancel this Agreement or withhold payment for GRANTEE's non-compliance with the Agreement. Further, SCAQMD reserves the right to cancel the Agreement if it is not executed by GRANTEE within 30 days of the receipt of this Grant.
25. ENFORCEMENT – SCAQMD, ~~and~~ ARB, or their designees, have the authority to enforce the terms of this Agreement at any time during the Agreement term plus two years. SCAQMD, ~~and~~ ARB will seek whatever legal,

equitable and other remedies are available for the GRANTEE's failure to comply with the terms of this Agreement or with the Lower-Emission School Bus Program requirements incorporated herein.

26. NOTICES – Any notices from either party to the other shall be given in writing to the attention of the persons listed below, or to other such addresses or addressees as may hereafter be designated in writing for notices by either party to the other. Notice shall be given by certified, express or registered mail, return receipt requested, and shall be effective as of the date of receipt indicated on the return receipt card.

SCAQMD:               South Coast Air Quality Management District  
                              21865 Copley Drive  
                              Diamond Bar, CA 91765-4178

GRANTEE:

27. INDEMNIFICATION - GRANTEE agrees to hold harmless, defend and indemnify SCAQMD, its officers, employees, agents, representatives, and successors-in-interest against any and all loss, damage, costs, lawsuits, demands, judgments, legal fees, or any other expenses incurred or required to be paid by SCAQMD, its officers, employees, agents, representatives, or successors-in-interest arising from or related to any injury to persons or damage to property caused directly or indirectly, in whole or in part, by any willful or negligent act or omission of GRANTEE, its employees, subcontractors, agents or representatives in the performance of this Grant.
28. ASSIGNMENT - The rights granted hereby may not be assigned, sold, licensed, or otherwise transferred by either party without the prior written consent of the other, and any attempt by either party to do so shall be void upon inception.
29. NON-EFFECT OF WAIVER - The failure of GRANTEE or SCAQMD to insist upon the performance of any or all of the terms, covenants, or conditions of this Grant, or failure to exercise any rights or remedies hereunder, shall not be construed as a waiver or relinquishment of the future performance of any such terms, covenants, or conditions, or of the future exercise of such rights or remedies, unless otherwise provided for herein.
30. ATTORNEYS' FEES - In the event any action is filed in connection with the enforcement or interpretation of this Grant, each party shall bear its own attorneys' fees and costs.
31. FORCE MAJEURE - Neither SCAQMD nor GRANTEE shall be liable or deemed to be in default for any delay or failure in performance under this Grant or interruption of services resulting, directly or indirectly, from acts of God, civil or military authority, acts of public enemy, war, strikes, labor disputes, shortages of suitable parts, materials, labor or transportation, or any similar cause beyond the reasonable control of SCAQMD or GRANTEE.

- 32. DE-OBLIGATION OF UNSPENT BALANCES - Upon thirty (30) days' written notice to GRANTEE, SCAQMD may de-obligate from the Grant funds that remain unexpended by the installation deadlines listed unless extended in writing. GRANTEE to initial here acknowledging consent to de-obligation of non-expended funding.  
\_\_\_\_\_
- 33. SUPERINTENDENT CERTIFICATION – By initialing here, Superintendent certifies that he/she had the authority to submit the application applying for the funds under this grant award and that the individual identified in Clause 26 (Notices) is the individual authorized to implement the project. \_\_\_\_\_
- 34. GOVERNING LAW - This Grant shall be construed and interpreted and the legal relations created thereby shall be determined in accordance with the laws of the State of California. Venue for resolution of any disputes under this Grant shall be Los Angeles County, California.
- 35. ENTIRE GRANT - This Contract represents the entire agreement between the parties hereto related to GRANTEE providing services to SCAQMD and there are no understandings, representations, or warranties of any kind except as expressly set forth herein. No waiver, alteration, or modification of any of the provisions herein shall be binding on any party unless in writing and signed by the party against whom enforcement of such waiver, alteration, or modification is sought.

The undersigned parties agree to the terms and conditions as set forth in this Grant. The undersigned parties certify under penalty of perjury that they are duly authorized to bind the parties to this Grant.

GRANTOR:  
*South Coast*  
*Air Quality Management District*

GRANTEE:  
*( )Unified School District*

\_\_\_\_\_  
*Signature of Authorized Official*

\_\_\_\_\_  
*Signature of Authorized Official*

Name: Dr. William A. Burke

Name: \_\_\_\_\_

Title: Chairman, Governing Board

Title: \_\_\_\_\_

Date \_\_\_\_\_

Date \_\_\_\_\_

**PART B**

***PM TRAP FILTERS***  
***(for 1994 to 2006 diesel school buses)***

***Public School Districts and Private Operators***

***#PA2015-06, Part B***

***March 6, 2015***

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Grant funds from AB 923 Fund are available for public school districts and school bus operators requesting CARB-verified Level 3 PM trap filters for eligible buses within the 1994 to 2006 model years (inclusive).

***I.A. PROGRAM SCHEDULE***

The implementation schedule of this program is illustrated below.

***School Bus Retrofit Program Schedule (estimated)***

March 6, 2015	Issue the Program Announcement & Application #PA2015-06
June 5, 2015	<b>Applications due by 5p.m. Friday, June 5, 2015, for school bus retrofits</b> (public school districts and private operators).
October 2, 2015	SCAQMD Board to consider approval of the PM trap filter awards
February 15, 2016	All PM trap orders must be placed with vendors by awardees. Copies of vendor quotes, and purchase order faxed to SCAQMD (attn. Ms. Lily Garcia, <a href="mailto:lgarcia1@aqmd.gov">lgarcia1@aqmd.gov</a> ).
September 30, 2016	PM traps must be installed and work completed
November 15, 2016	All invoices must be submitted to SCAQMD.

***I.B. APPLICATION SUBMITTAL***

The applicant shall submit **four** copies (1 original and 3 copies) of the application in a sealed envelope, plainly marked in the upper left-hand corner with the name and address of the applicant and the words “Program Application #PA2015-06 (Part B)”. **All four copies of the applications are due no later than 5 p.m. Friday, June 5, 2015 to:**

Mr. Dean D. Hughbanks, Procurement Manager  
**Re: “Program Application #PA2015-06 (Part B)  
School Bus Retrofit”**  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA. 91765

All the applications must be signed by the school’s superintendent or in the case of a private operator by senior official authorized to bind the operator.

## ***GRANT PROVISIONS FOR SCHOOL BUS RETROFIT OF PM TRAPS***

### ***A. School Bus PM Trap Retrofit Criteria***

1. California public school districts that own and operate school buses, including joint power authorities, along with private operators are eligible to apply for funds.
2. To establish eligibility for SCAQMD funds, during the application process, private transport contractors need to provide copies of their executed agreements with public school districts to transport their students. Digital copies (attention: Ranji George, [rgeorge@aqmd.gov](mailto:rgeorge@aqmd.gov)) are acceptable.
3. **Only 1994 to 2006** model year diesel-powered buses with GWR greater than 14,000 lbs qualify for PM Trap retrofits.
4. Only four-stroke diesel powered engines will be retrofitted in the current program.
5. All retrofit devices must be verified by CARB to Level III performance to achieve a minimum reduction of 85% in PM. A list of verified PM traps can be accessed at CARB's Website:

<http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>

6. Applicants have a choice to select any PM trap filter, verified by CARB, in the application form. If prices quoted are determined to not be reasonable, applicants must seek bids from at least two authorized vendors.
7. Before placing a purchase order for PM traps and/or cleaning equipment, please seek approval of vendor quotes for these traps and/or cleaning equipment by sending the quotes to SCAQMD (attn: Ranji George, [rgeorge@aqmd.gov](mailto:rgeorge@aqmd.gov)).
8. Only low-sulfur diesel fuel (with 15ppm of sulfur or less) should be used for PM trap filters. Such fuel has been widely available in the Basin since June 1, 2006.
9. No fuel additives are allowed in the low-sulfur diesel fuel. In general, fuel additives tend to substantially degrade the performance of these PM traps.
10. Since the verification of retrofit devices for different engine families may expand, school districts and school transportation companies are requested to submit their applications by providing the list of all the eligible 1994 to 2006 buses that they would like to retrofit.



## ***FUNDING ALLOCATIONS***

### ***A. Amounts of Funding***

- The program will cover the full cost of retrofit devices and installation including sales tax, data logging if necessary, lifetime periodic maintenance, and electrical infrastructure for up to \$20,000 per active filter as outlined below.
- \$250 per bus to cover the cost of data-logging if CARB has specified that data logging for determining temperature profile is mandatory for the selected PM trap filter.
- For those applicants receiving six or more filters, one cleaning or baking machine (per 6 filters) is available for a maximum price of \$13,500 installed (inclusive equipment, sales tax, transportation and labor). This cleaning/baking machine(s) must be maintained, including periodic cleaning of its filter, in accordance to manufacturer specifications.
- Alternatively, up to \$2,500 per filter is available for lifetime periodic maintenance of these filters, such as baking and de-ashing to remove the ash from motor oil combustion. These funds are in addition to the purchase and installation of the retrofit device. (If feasible, SCAQMD prefers the applicant purchase a cleaning machine, and clean the PM traps in-house as opposed to out-source its cleaning.)
- Funds will be provided to install electrical infrastructure to regenerate active PM trap filters. A minimum of two (2) quotes are needed for bids under \$5,000, while a minimum of three (3) quotes are needed for work at or exceeding \$5,000.

### ***B. Matching fund requirement for the PM Trap Retrofit Program***

- No matching funds are required of the applicant
- School districts and transportation companies shall be responsible for routine maintenance of the retrofit devices and cleaning machines

### ***C. Authorizing Signature***

The submitted application must be signed by school district's superintendent and/or a president or CEO of the private contractor requesting funds to retrofit school buses.

### ***D. CHP Inspection prior to Return of Service***

- All buses retrofitted with PM devices must be inspected by the CHP prior to the return to service. Among other safety checks, CHP will confirm if the installation

of the retrofit device was done according to manufacturer's specifications. The CHP inspection certificate with appropriate VIN# and Vehicle ID# must accompany any request for reimbursement. The CHP officer must state in the inspection certificate that the particular "PM device was installed according to manufacturer specifications". PM device should be identified by the brand name.

- A copy of the DMV registration for each retrofitted bus must be included with the invoice package. The details on the DMV registration (including VIN# and license #) must match the CHP 343 inspection certificate.

#### ***E. Disbursement of Funds***

- Funds will be paid on a reimbursement basis by the SCAQMD after the installation of the retrofit devices.
- Vendors who install these PM traps should bill SCAQMD directly.
- The invoice or cover letter must have the correct VIN# of the bus that was retrofitted with the PM trap
- Clear photo of the engine label indicating engine family # and serial #.
- The invoice and/or cover letter must be signed by the school district's Director of Transportation or senior official of the private contractor, and must instruct SCAQMD to pay the vendor who installed the retrofit device
- Proof of CHP inspection of the retrofit device and the DMV registration of the bus shall accompany the invoice.
- Copy of the vendor quotes and purchase orders issued by the applicant should accompany the invoice.
- All requests for reimbursement must be received by November 15, 2016.

### ***PROJECT IMPLEMENTATION***

#### ***A. Project Selection and Award of Funds***

Only public school districts and private operators are eligible for this Program. SCAQMD will award funds on a first-come, first-served basis, with public school districts having preference over private operators. Furthermore, one-half of the total funding will be distributed in compliance with Health and Safety Code 43023.5 (AB1390, Firebaugh), to school districts and private vendors that directly benefit low-income communities and communities of color, disproportionately impacted by air pollution.

#### ***B. Project Completion Deadlines***

All PM traps and PM trap cleaning equipment shall be installed no later than September 30, 2016.

### ***C. Monitoring and Reporting***

School districts receiving funding must notify the funding agency when the retrofit devices are ordered and again when the devices are installed. Proof of CHP inspection and approval should accompany invoices submitted by the vendor to SCAQMD for reimbursement.

#### ***I.C. IF YOU NEED HELP***

This Program Announcement and Application #PA2015-06 can be obtained by accessing the SCAQMD website at [www.aqmd.gov/grants-bids](http://www.aqmd.gov/grants-bids). SCAQMD staff members are available to answer questions during the application acceptance period. In order to help expedite assistance, please direct your inquiries to the applicable staff person, as follows:

- For **General, Administrative, or Technical Assistance**, please contact:

**Ranji S. George**, Program Supervisor  
Technology Advancement Office  
Phone 909-396-3255  
Fax: 909-396-3252  
[rgeorge@aqmd.gov](mailto:rgeorge@aqmd.gov)

- For **Questions on Invoices and Contracts**, please contact:

**Drue Hargis**, Senior Public Information Specialist  
Technology Advancement Office  
Phone: 909-396-3237  
Fax: 909-396-3774  
[dhargis@aqmd.gov](mailto:dhargis@aqmd.gov)

**Lily Garcia**  
Technology Advancement Office  
Phone: 909-396-2832  
Fax: 909-396-3252  
[lgarcia1@aqmd.gov](mailto:lgarcia1@aqmd.gov)

**Appendix B**

**APPLICATION FOR SCHOOL BUS  
PM Trap Retrofit GRANT  
(for public school districts and private operators only)  
(1994 and newer diesel buses only)**

**#PA2015-06 – (Part B)**

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**GRANT APPLICATION FORM FOR THE SCHOOL BUS  
PM Trap Filters  
#PA2015-06 RETROFIT PROGRAM**

(Please sign and return, with list of buses for retrofits)

# of PM traps applied for \_\_\_\_\_

Public School District: \_\_\_\_\_

Street Address: \_\_\_\_\_

City: \_\_\_\_\_ County \_\_\_\_\_ State: CA

Zip Code: \_\_\_\_\_

Air District  
Jurisdiction:

\_\_\_\_\_

**Contact Person:**

Name/Title: \_\_\_\_\_

Phone No.: \_\_\_\_\_ Extn \_\_\_\_\_ Fax: No.: \_\_\_\_\_

Email (please print): \_\_\_\_\_

**Contact Information on Alternative Contact (Name, Title, Phone#, Email):**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Applicant confirms that none of the buses being applied for in the attached sheet has an existing Level 3 PM trap already installed.

This application must be signed below by an authorized person to be considered for awards to retrofit school buses with PM traps. For school districts, Superintendent's signature is needed, while for private transportation companies, the President or CEO must sign.

**Authorized Person's Signature:** \_\_\_\_\_

**Authorized Person's Name & Title:** \_\_\_\_\_

**Date of Application** \_\_\_\_\_

**PROPOSED BUSES TO BE RETROFITTED WITH LEVEL 3 PM TRAP FILTERS\***

**(Eligibility restricted to 1994 to 2006 buses, with GVWR over 14,000 lbs, which does not have a Level 3 Trap already)**

<b>Bus ID No.</b>	<b>Make, Manuf'r, Model Year of Bus</b>	<b>VIN No.</b>	<b>DMV License #</b>	<b>Cumulative Mileage</b>	<b>Engine Make, Model, Year</b>	<b>Engine Family # (listed on engine label)</b>	<b>GVWR</b>	<b>Name of PM trap</b>	<b>Installed price of PM Trap*</b>
Add more pages if needed									

\* Applicant has the choice to select any CARB-verified Level 3 PM trap filter. Once selected, applicant must specify the make, model, manufacturer of the PM trap, and provide the ARB Executive Order (EO) for that Trap indicating the Trap was verified for the specific engine family listed above. Applicant must also specify the cost to purchase sales tax and install the PM trap. Three vendor quotes need to be included. SCAQMD reserves the right to approve these quotes.

- With the school district application, a school board resolution authorizing submittal of the application and identifying the individual authorized to implement the school bus replacement project. The School District Superintendent must sign the school district application and President or the CEO for all other applicants.
- For each 1994 to 2006 bus listed above, please include the following in the application package:
  - DMV Registration
  - DMV Title
  - CHP292s for year 2013 and 2014 only
  - (Alternatively, CHP 343A that confirms that the bus passed inspection for that year)
  - Clear data label bus tag confirming bus VIN# and GVWR
  - Clear photo of engine data label confirming make, model year, engine displacement and Engine Family
  - At least three vendor quotes to install a compatible CARB-verified PM trap
  - CARB Executive Order for the PM trap that includes the specific engine family
- Once the PM trap(s) are installed, applicant needs to operate these buses in this Basin for a minimum of five (5) years. If the bus is withdrawn from service, or removed from this Basin, applicant may incur a penalty.
- If active filter is selected, Estimated Cost of Electrical Infrastructure \_\_\_\_\_

(Before receiving an award for electrical work, applicant must request at least 2 quotes for work under \$5,000 and a minimum of 3 quotes for work at or above \$5,000).

- ***Applicants must print as well as provide electronically their fleet inventory in an Excel Worksheet to SCAQMD (attn: Ranji George, [rgeorge@aqmd.gov](mailto:rgeorge@aqmd.gov)).***
  - *Details of each school bus in the fleet must be provided –whether it is being retrofitted or not. These should include, but are not limited to make, manufacturer, model year of buses, passenger capacity, engine make and model year, VIN#, DMV license plate #, fuel type, cumulative mileage, average annual mileage bus is driven. For 1994 and newer models, please identify which diesel buses have Level 3 PM traps and which do not.*



Sample Provisions. SCAQMD reserves the right to amend these provisions.

## SAMPLE GRANT AWARD (Do Not Return this Sample Grant with Application)

### Lower-Emission School Bus PM Trap Retrofit Program 1. GRANT AWARD AGREEMENT Pursuant to Program Announcement #PA2015-06

Your grant application to purchase and install Particulate Matter ("PM") traps on diesel school buses listed in Attachment A ("Project") has been approved for funding by the South Coast Air Quality Management District ("SCAQMD") Governing Board.

As a condition of this grant award, you must comply with all the terms and conditions set forth in this Grant Award Agreement, including those described in Attachment A (List of School Buses to be Retrofitted), Attachment B (Reporting Data on School Bus Retrofits), Attachment C (Program Announcement #PA2015-06 issued on March 6, 2015) and the 2008 CARB School Bus Guidelines dated April 15, 2008 and associated Advisories, which are incorporated herein as part of this Agreement.

Grant Recipient ("Grantee")	
Grant Number	
Total Number of PM Traps Awarded (only 1994 and newer school buses are eligible for retrofits)	
Total Grant for PM Traps & Trap Maintenance (e.g., PM trap cleaners, thermal regenerator, electrical infrastructure and/or data logging)	
Date by Which PM Traps & Cleaners Need to be Installed	September 30, 2016
Date by Which Invoices Need to be Submitted	November 15, 2016
Agreement Term	Until December 30, 2021
Date to Which All Records (relating to this Grant) Need to be Retained	Until December 30, 2020

\*The installed price for each PM trap is subject to a maximum cap. Prior to issuance of purchase order (P.O.), any PM trap quotes along with draft P.O. needs to be reviewed by SCAQMD's School Bus Program Supervisor.

36. PARTIES - The parties to this Grant Award Agreement ("Agreement") are the South Coast Air Quality Management District ("SCAQMD") whose address is 21865 Copley Drive, Diamond Bar, California 91765-4178, and ( ) Applicant ("GRANTEE") whose address is \_\_\_\_\_.
37. PROJECT MILESTONES – GRANTEE must purchase and install all the awarded PM traps and PM trap cleaning equipment, if applicable, by **September 30, 2016**. The PM traps must have been verified by the CARB to **Level III Plus** to achieve a minimum of 85% reduction in PM. GRANTEE must install said PM traps in the school buses listed in Attachment A. GRANTEE must buy PM trap cleaning equipment using the PM trap maintenance funds. Documentation required for payment of

grant funds to GRANTEE or vendor must be received by SCAQMD by **November 15, 2016**. See Clause 10 below for a complete list of the required documents.

38. ENFORCEMENT – SCAQMD and CARB have the authority to enforce the terms of this Agreement at any time during the Agreement term. SCAQMD and CARB will seek whatever legal, equitable and other remedies are available for the GRANTEE'S failure to comply with the terms of this Agreement or with the Lower-Emission School Bus Program requirements incorporated herein.
  
39. AGREEMENT TERM – The term of this Agreement is from the date of execution by both parties to **September 30, 2021**, unless further extended by amendment of this Agreement in writing. No work shall commence until this Agreement is fully executed by all parties. Notwithstanding the above end dates, the Agreement term shall encompass both the Project completion and Project implementation/life periods, whichever is longer, to ensure that the SCAQMD and CARB can fully enforce the Agreement during the life of the Lower-Emission School Bus Program-funded project. The Project must comply with the 2008 CARB Lower-Emission School Bus Program Guidelines<sup>1</sup> and any amendments thereto, and must meet all Program requirements for the full agreement term.
  - A. Project Completion – Project completion is the timeframe starting with the date of Agreement execution by both parties to the date the project becomes operational. This includes the time period when the equipment is ordered, delivered and installed. The project becomes operational on the date the final invoice payment is made by SCAQMD or **December 30, 2016**, whichever is earlier.
  - B. Project Implementation/Life – The project implementation timeframe is five years from the date of project completion (date when final invoice payment is made by SCAQMD); in this case until **December 30, 2021**. GRANTEE must own and operate the retrofitted bus for a minimum of five years or until **December 30, 2021**, whichever is later.
  
40. NON-COMPLIANCE – SCAQMD reserves the right to cancel this Agreement or withhold payment for GRANTEE'S non-compliance with the Agreement. Further, SCAQMD reserves the right to cancel the Agreement if it is not executed by GRANTEE within 45 days of receipt of this grant by the GRANTEE.
  
41. AUDIT RIGHTS – SCAQMD, CARB, the California Department of Finance, or their designee(s), shall have the right to review and to copy any records and supporting documentation pertaining to the performance of this Agreement. GRANTEE agrees to allow the auditor(s) access to such records during normal business hours and to allow interviews of any employees who might reasonably have information related to such records. GRANTEE must include a similar right of the State, SCAQMD and CARB to audit records and interview staff in any subcontract related to the performance of this Agreement.
  
42. RECORDS AND RECORDS RETENTION – GRANTEE shall maintain all records related to this Project and retain these records for the Agreement term (**December 30, 2021**) plus two years. These records include, but are not limited to, the following:
  - A. Application;

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<sup>1</sup> These Guidelines and subsequent CARB advisories are available at the following CARB Web link: <http://arb.ca.gov/bonds/schoolbus/guidelines/2008lesbp.pdf>

- B. Resolution from the school district governing board (or other documentation signed by a duly authorized official) authorizing the submittal of the application and identifying the individual authorized to implement the retrofit project;
  - C. Vendor quotes for PM traps, PM trap cleaners and electrical infrastructure;
  - D. Purchase orders issued by GRANTEE;
  - E. Executed contracts;
  - F. Invoice(s);
  - G. Proof of payment;
  - H. A copy of the Safety Compliance Report/Terminal Record Update (CHP 343) or a copy of the Vehicle/Equipment Inspection Report Motor Carrier Safety Operations form (CHP 343A) for each school bus retrofitted;
  - I. A copy of the CARB retrofit device verification executive order for the device that was funded;
  - J. Maintenance records; and
  - K. Documentation in the form of invoices or purchase orders that include dates of installation and maintenance, description of services performed and cost of services.
43. ON-SITE INSPECTIONS – SCAQMD and CARB, or their designee(s), shall have the right to inspect the retrofitted bus(es) and maintenance equipment during the entire Agreement term.
44. CHP SAFETY INSPECTION – Each retrofitted bus must undergo a CHP safety certification inspection (per Title 13, Cal. C. Regs. § 1272(c)) after the installation of the PM trap and prior to the bus's return to service. GRANTEE must obtain a copy of written documentation from CHP personnel that the retrofitted bus is still structurally acceptable to safely transport students and provide this documentation to SCAQMD. This documentation shall consist of a copy of a Safety Compliance Report/Terminal Record Update (CHP 343), or a copy of a Vehicle/Equipment Inspection Report Motor Carrier Safety Operations form (CHP 343A). This CHP certificate should specifically state that the PM trap was installed to manufacturer specifications.
45. INVOICE AND PAYMENT – Before a Lower-Emission School Bus Program payment is made to a vendor or to GRANTEE, this Agreement must be executed and the following documentation must be received by SCAQMD no later than **November 15, 2016**:
- A. An invoice with breakdown of costs between parts and labor verifying purchase and installation of PM traps on each school bus listed in Attachment A.
  - B. If PM trap cleaning equipment is installed, a separate invoice including a similar breakdown of costs between parts and labor, and a cover letter as explained below in C.
  - C. A cover letter signed under penalty of perjury by the GRANTEE'S Director of Transportation, or his/her equivalent, which must contain the following:
    - i. Details of the bus(es) that were retrofitted with PM traps. [To prevent delay in processing the invoices, GRANTEE must verify that the Vehicle Identification Numbers (VINs) and other details of the bus(es) listed on the invoice identically match the VINs of the bus(es) listed in Attachment A of this Agreement];
    - ii. Confirmation that the PM trap cleaning equipment and electrical infrastructure was purchased and installed; and
    - iii. Instruction to SCAQMD to pay the vendor(s) directly. SCAQMD prefers that each vendor bill SCAQMD directly. If GRANTEE pays a vendor directly and seeks reimbursement from SCAQMD, GRANTEE must submit copies of the front and back of all cancelled check(s) paid to vendor, along with the request to pay the GRANTEE directly.

- iv. Confirmation of existing number of buses with PM traps and electrical charging outlets, and
- v. Confirmation of the number of additional electrical outlets installed under this Grant.
- D. A copy of front page of this Agreement that lists the Summary Table and Grant #.
- E. A copy of Attachment A to this Agreement, identifying and highlighting the buses that were retrofitted with PM traps. VIN(s) and details of the buses listed on the submitted invoice(s) must match those in Attachment A.
- F. Copies of warranties provided for each PM trap installed;
- G. Copy of the Purchase Order(s) issued by the GRANTEE (School District) to the Installer and Electrician.
- H. A copy of the DMV certificate of the school bus retrofitted with the PM trap.
- I. For each retrofitted school bus, a copy of a completed CHP form 343–Safety Compliance Report/Terminal Record Update, or a copy of a completed CHP form 343A–Vehicle/Equipment Inspection Report Motor Carrier Safety Operations.
- J. Two electronic files to be sent to Mr. Ranji George that includes (a) PDF scan of the whole invoice package, (b) an Excel Worksheet that lists the bus information required in Attachment B and (c) fleet inventory with details each bus in the fleet (see application in program announcement for required details)

Please submit all documentation to Ms. Drue Ann Hargis, TAO Contracts, SCAQMD, 21865 Copley Drive, Diamond Bar, CA 91765. All documentation described above must be received no later than **November 15, 2016**.

46. OWNERSHIP AND OPERATION

- A. GRANTEE shall accrue at least 75% of each vehicle's annual mileage or engine hours of operation within the geographical boundaries of the SCAQMD.
- B. GRANTEE is prohibited from removing the retrofitted school bus(es) from service in California during the term of this Agreement, unless the retrofitted school bus(es) become inoperable through mechanical failure of components or systems, and cannot be repaired or replaced, and such failure is not caused by GRANTEE'S negligence, misuse or malfeasance.
- C. GRANTEE must own and operate the retrofitted bus(es) for a minimum of five years, **or until December 30, 2021, whichever is later.**

47. MAINTENANCE – GRANTEE shall operate and maintain the installed PM traps funded under this Agreement in accordance with the manufacturer's specifications for the life of the Project. GRANTEE acknowledges that no tampering with the installed PM traps is permitted. Further, GRANTEE must have the PM traps cleaned periodically (also known as "periodic maintenance" and "baking and de-ashing") throughout their estimated 11-year life, or if a bus is kept for less than 11 years, as long as GRANTEE owns and operates the retrofitted bus(es).

48. FUEL ADDITIVES – GRANTEE must use only the generally available, low sulfur (15 ppm or lower) diesel fuel in all the buses retrofitted with PM traps. The fuel must not contain any fuel or lube oil additives, per CARB regulations, unless specially identified as allowable in the engine certification executive order.

49. PURCHASE ORDER AGREEMENTS – GRANTEE must incorporate the minimum grant requirements described in Appendix C of the 2008 CARB Guidelines to Lower-Emission School Bus Program applicable to this Project in purchase order agreements with vendors.

50. REPORTING REQUIREMENTS - During the term of this Agreement, GRANTEE agrees to provide periodic reports to SCAQMD on the implementation of this award, including but not limited to, entering detailed information in SCAQMD and/or CARB's School Bus Database on the control device and each school bus that is retrofitted under this Award. GRANTEE will require its Vendor to cooperate in providing these reports. SCAQMD will specify the frequency and format of these reports.
51. NOTICES – Any notices from either party to the other shall be given in writing to the attention of the persons listed below, or to other such addresses or addressees as may hereafter be designated in writing for notices by either party to the other. Notice shall be given by certified, express or registered mail, return receipt requested, and shall be effective as of the date of receipt indicated on the return receipt card.

SCAQMD: South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765-4178

GRANTEE: School District, Transportation Director.

52. INDEMNIFICATION - GRANTEE agrees to hold harmless, defend and indemnify SCAQMD, its officers, employees, agents, representatives, and successors-in-interest against any and all loss, damage, costs, lawsuits, demands, judgments, legal fees, or any other expenses incurred or required to be paid by SCAQMD, its officers, employees, agents, representatives, or successors-in-interest arising from or related to any injury to persons or damage to property caused directly or indirectly, in whole or in part, by any willful or negligent act or omission of GRANTEE, its employees, subcontractors, agents or representatives in the performance of this Grant.
53. ASSIGNMENT - The rights granted hereby may not be assigned, sold, licensed, or otherwise transferred by either party without the prior written consent of the other, and any attempt by either party to do so shall be void upon inception.
54. NON-EFFECT OF WAIVER - The failure of GRANTEE or SCAQMD to insist upon the performance of any or all of the terms, covenants, or conditions of this Grant, or failure to exercise any rights or remedies hereunder, shall not be construed as a waiver or relinquishment of the future performance of any such terms, covenants, or conditions, or of the future exercise of such rights or remedies, unless otherwise provided for herein.
55. ATTORNEYS' FEES - In the event any action is filed in connection with the enforcement or interpretation of this Grant, each party shall bear its own attorneys' fees and costs.
56. FORCE MAJEURE - Neither SCAQMD nor GRANTEE shall be liable or deemed to be in default for any delay or failure in performance under this Grant or interruption of services resulting, directly or indirectly, from acts of God, civil or military authority, acts of public enemy, war, strikes, labor disputes, shortages of suitable parts, materials, labor or transportation, or any similar cause beyond the reasonable control of SCAQMD or GRANTEE.
57. GOVERNING LAW - This Grant shall be construed and interpreted and the legal relations created thereby shall be determined in accordance with the laws of the State of California. Venue for resolution of any disputes under this Grant shall be Los Angeles County, California.

58. ENTIRE GRANT - This Contract represents the entire agreement between the parties hereto related to GRANTEE providing services to SCAQMD and there are no understandings, representations, or warranties of any kind except as expressly set forth herein. No waiver, alteration, or modification of any of the provisions herein shall be binding on any party unless in writing and signed by the party against whom enforcement of such waiver, alteration, or modification is sought.

The undersigned parties agree to the terms and conditions as set forth in this Agreement. The undersigned parties certify under penalty of perjury that they are duly authorized to bind the parties to this Agreement.

GRANTOR:

GRANTEE:

South Coast Air Quality Management District

( ) Unified School District

By: \_\_\_\_\_

Dr. William A. Burke  
Chairman of the Governing Board

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

## *CERTIFICATIONS AND REPRESENTATIONS*

1. Business Contact Information
2. W9- with EIN Taxpayer ID#
3. Campaign Contribution Disclosure Form (for private companies only)



# South Coast Air Quality Management District

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

## **Business Contact Information Request**

Dear SCAQMD Contractor/Supplier:

The South Coast Air Quality Management District (SCAQMD) is committed to ensuring that our contractor/supplier records are current and accurate. If your firm is selected for award of a purchase order or contract, it is imperative that the information requested herein be supplied in a timely manner to facilitate payment of invoices. In order to process your payments, we need the enclosed information regarding your account. **Please review and complete the information identified on the following pages, complete the enclosed W-9 form, remember to sign both documents for our files, and return them as soon as possible to the address below:**

**Attention: Accounts Payable, Accounting Department  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765-4178**

If you do not return this information, we will not be able to establish you as a vendor. This will delay any payments and would still necessitate your submittal of the enclosed information to our Accounting department before payment could be initiated. Completion of this document and enclosed forms would ensure that your payments are processed timely and accurately.

If you have any questions or need assistance in completing this information, please contact Accounting at (909) 396-3777. We appreciate your cooperation in completing this necessary information.

Sincerely,

Michael B. O'Kelly  
Chief Financial Officer

DH:tm

Enclosures: Business Contact Information Request  
W-9 tax form with EIN number  
Campaign Contribution Disclosure (private companies only)

REV 2/11





# South Coast Air Quality Management District

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

All applicants: Please return this completed page with Application

## BUSINESS CONTACT INFORMATION REQUEST

Business Name	
Division of	
Subsidiary of	
Website Address	
Type of Business <i>Check One:</i>	<input type="checkbox"/> Individual <input type="checkbox"/> DBA, Name _____, County Filed in _____ <input type="checkbox"/> Corporation, ID No. _____ <input type="checkbox"/> LLC/LLP, ID No. _____ <input type="checkbox"/> Other _____

## REMITTING ADDRESS INFORMATION

Address			
City/Town			
State/Province	Zip		
Phone	(    )    -    Ext	Fax	(    )    -
Contact	Title		
E-mail Address			
Payment Name if Different			

All invoices must reference the corresponding Purchase Order Number(s)/Contract Number(s) if applicable and mailed to:

**Attention: Ms. Drue Hargis, TAO, SCAQMD**  
**21865 Copley Drive**  
**Diamond Bar, CA 91765-4178**



The person who gives Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States is in the following cases:

- The U.S. owner of a disregarded entity and not the entity,
- The U.S. grantor or other owner of a grantor trust and not the trust, and
- The U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

**Foreign person.** If you are a foreign person, do not use Form W-9. Instead, use the appropriate Form W-8 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

**Nonresident alien who becomes a resident alien.** Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

**Example.** Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity not subject to backup withholding, give the requester the appropriate completed Form W-8.

**What is backup withholding?** Persons making certain payments to you must under certain conditions withhold and pay to the IRS a percentage of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

#### Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the Part II instructions on page 3 for details),
3. The IRS tells the requester that you furnished an incorrect TIN,
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or
5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See the instructions below and the separate instructions for the Requester of Form W-9.

Also see *Special rules for partnerships* on page 1.

#### Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account, for example, if the grantor of a grantor trust dies.

#### Penalties

**Failure to furnish TIN.** If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

**Civil penalty for false information with respect to withholding.** If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

**Criminal penalty for falsifying information.** Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

**Misuse of TINs.** If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

#### Specific Instructions

##### Name

If you are an individual, you must generally enter the name shown on your income tax return. However, if you have changed your last name, for instance, due to marriage without informing the Social Security Administration of the name change, enter your first name, the last name shown on your social security card, and your new last name.

If the account is in joint names, list first, and then circle, the name of the person or entity whose number you entered in Part I of the form.

**Sole proprietor.** Enter your individual name as shown on your income tax return on the "Name" line. You may enter your business, trade, or "doing business as (DBA)" name on the "Business name/disregarded entity name" line.

**Partnership, C Corporation, or S Corporation.** Enter the entity's name on the "Name" line and any business, trade, or "doing business as (DBA)" name on the "Business name/disregarded entity name" line.

**Disregarded entity.** Enter the owner's name on the "Name" line. The name of the entity entered on the "Name" line should never be a disregarded entity. The name on the "Name" line must be the name shown on the income tax return on which the income will be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a domestic owner, the domestic owner's name is required to be provided on the "Name" line. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on the "Business name/disregarded entity name" line. If the owner of the disregarded entity is a foreign person, you must complete an appropriate Form W-8.

**Note.** Check the appropriate box for the federal tax classification of the person whose name is entered on the "Name" line (Individual/sole proprietor, Partnership, C Corporation, S Corporation, Trust/estate).

**Limited Liability Company (LLC).** If the person identified on the "Name" line is an LLC, check the "Limited liability company" box only and enter the appropriate code for the tax classification in the space provided. If you are an LLC that is treated as a partnership for federal tax purposes, enter "P" for partnership. If you are an LLC that has filed a Form 8832 or a Form 2553 to be taxed as a corporation, enter "C" for C corporation or "S" for S corporation. If you are an LLC that is disregarded as an entity separate from its owner under Regulation section 301.7701-3 (except for employment and excise tax), do not check the LLC box unless the owner of the LLC (required to be identified on the "Name" line) is another LLC that is not disregarded for federal tax purposes. If the LLC is disregarded as an entity separate from its owner, enter the appropriate tax classification of the owner identified on the "Name" line.

**Other entities.** Enter your business name as shown on required federal tax documents on the "Name" line. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on the "Business name/disregarded entity name" line.

### Exempt Payee

If you are exempt from backup withholding, enter your name as described above and check the appropriate box for your status, then check the "Exempt payee" box in the line following the "Business name/disregarded entity name," sign and date the form.

Generally, individuals (including sole proprietors) are not exempt from backup withholding. Corporations are exempt from backup withholding for certain payments, such as interest and dividends.

**Note.** If you are exempt from backup withholding, you should still complete this form to avoid possible erroneous backup withholding.

The following payees are exempt from backup withholding:

1. An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2),
  2. The United States or any of its agencies or instrumentalities,
  3. A state, the District of Columbia, a possession of the United States, or any of their political subdivisions or instrumentalities,
  4. A foreign government or any of its political subdivisions, agencies, or instrumentalities, or
  5. An international organization or any of its agencies or instrumentalities.
- Other payees that may be exempt from backup withholding include:
6. A corporation,
  7. A foreign central bank of issue,
  8. A dealer in securities or commodities required to register in the United States, the District of Columbia, or a possession of the United States,
  9. A futures commission merchant registered with the Commodity Futures Trading Commission,
  10. A real estate investment trust,
  11. An entity registered at all times during the tax year under the Investment Company Act of 1940,
  12. A common trust fund operated by a bank under section 584(a),
  13. A financial institution,
  14. A middleman known in the investment community as a nominee or custodian, or
  15. A trust exempt from tax under section 664 or described in section 4947.

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 15.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 9
Broker transactions	Exempt payees 1 through 5 and 7 through 13. Also, C corporations.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 5
Payments over \$600 required to be reported and direct sales over \$5,000 <sup>1</sup>	Generally, exempt payees 1 through 7 <sup>2</sup>

<sup>1</sup> See Form 1099-MISC, Miscellaneous Income, and its instructions.

<sup>2</sup> However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney, and payments for services paid by a federal executive agency.

### Part I. Taxpayer Identification Number (TIN)

**Enter your TIN in the appropriate box.** If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-member LLC that is disregarded as an entity separate from its owner (see *Limited Liability Company (LLC)* on page 2), enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

**Note.** See the chart on page 4 for further clarification of name and TIN combinations.

**How to get a TIN.** If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local Social Security Administration office or get this form online at [www.ssa.gov](http://www.ssa.gov). You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at [www.irs.gov/businesses](http://www.irs.gov/businesses) and clicking on Employer Identification Number (EIN) under Starting a Business. You can get Forms W-7 and SS-4 from the IRS by visiting [IRS.gov](http://IRS.gov) or by calling 1-800-TAX-FORM (1-800-829-3676).

If you are asked to complete Form W-9 but do not have a TIN, write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

**Note.** Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

**Caution:** A disregarded domestic entity that has a foreign owner must use the appropriate Form W-8.

### Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if item 1, below, and items 4 and 5 on page 4 indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on the "Name" line must sign. Exempt payees, see *Exempt Payee* on page 3.

**Signature requirements.** Complete the certification as indicated in items 1 through 3, below, and items 4 and 5 on page 4.

**1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983.** You must give your correct TIN, but you do not have to sign the certification.

**2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983.** You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

**3. Real estate transactions.** You must sign the certification. You may cross out item 2 of the certification.

**4. Other payments.** You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

**5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions.** You must give your correct TIN, but you do not have to sign the certification.

### What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account)	The actual owner of the account or, if combined funds, the first individual on the account <sup>1</sup>
3. Custodian account of a minor (Uniform Gift to Minors Act)	The minor <sup>2</sup>
4. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee <sup>1</sup>
b. So-called trust account that is not a legal or valid trust under state law	The actual owner <sup>1</sup>
5. Sole proprietorship or disregarded entity owned by an individual	The owner <sup>3</sup>
6. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulation section 1.671-4(b)(2)(i)(A))	The grantor <sup>4</sup>
For this type of account:	Give name and EIN of:
7. Disregarded entity not owned by an individual	The owner
8. A valid trust, estate, or pension trust	Legal entity <sup>4</sup>
9. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
10. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
11. Partnership or multi-member LLC	The partnership
12. A broker or registered nominee	The broker or nominee
13. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
14. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulation section 1.671-4(b)(2)(i)(B))	The trust

<sup>1</sup> List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

<sup>2</sup> Circle the minor's name and furnish the minor's SSN.

<sup>3</sup> You must show your individual name and you may also enter your business or "DBA" name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

<sup>4</sup> List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships* on page 1.

\*Note. Grantor also must provide a Form W-9 to trustee of trust.

**Note.** If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

### Secure Your Tax Records from Identity Theft

Identity theft occurs when someone uses your personal information such as your name, social security number (SSN), or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN.
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Publication 4535, Identity Theft Prevention and Victim Assistance.

Victims of identity theft who are experiencing economic harm or a system problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

**Protect yourself from suspicious emails or phishing schemes.** Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to [phishing@irs.gov](mailto:phishing@irs.gov). You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at: [spam@uce.gov](mailto:spam@uce.gov) or contact them at [www.ftc.gov/idtheft](http://www.ftc.gov/idtheft) or 1-877-IDTHEFT (1-877-436-4336).

Visit [IRS.gov](http://IRS.gov) to learn more about identity theft and how to reduce your risk.

### Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.



**CAMPAIGN CONTRIBUTIONS DISCLOSURE**  
**(School Districts are exempt from filling these disclosures.**  
**Private companies need to fill these forms and return with application)**

In accordance with California law, bidders and contracting parties are required to disclose, at the time the application is filed, information relating to any campaign contributions made to South Coast Air Quality Management District (SCAQMD) Board Members or members/alternates of the MSRC, including: the name of the party making the contribution (which includes any parent, subsidiary or otherwise related business entity, as defined below), the amount of the contribution, and the date the contribution was made. 2 C.C.R. §18438.8(b).

California law prohibits a party, or an agent, from making campaign contributions to SCAQMD Governing Board Members or members/alternates of the Mobile Source Air Pollution Reduction Review Committee (MSRC) of more than \$250 while their contract or permit is pending before the SCAQMD; and further prohibits a campaign contribution from being made for three (3) months following the date of the final decision by the Governing Board or the MSRC on a donor's contract or permit. Gov't Code §84308(d). For purposes of reaching the \$250 limit, the campaign contributions of the bidder or contractor plus contributions by its parents, affiliates, and related companies of the contractor or bidder are added together. 2 C.C.R. §18438.5.

In addition, SCAQMD Board Members or members/alternates of the MSRC must abstain from voting on a contract or permit if they have received a campaign contribution from a party or participant to the proceeding, or agent, totaling more than \$250 in the 12-month period prior to the consideration of the item by the Governing Board or the MSRC. Gov't Code §84308(c).

The list of current SCAQMD Governing Board Members can be found at the SCAQMD website ([www.aqmd.gov](http://www.aqmd.gov)). The list of current MSRC members/alternates can be found at the MSRC website (<http://www.cleantransportationfunding.org>).

**SECTION I.**

**Contractor (Legal Name):** \_\_\_\_\_

DBA, Name _____, County Filed in _____ _____ Corporation, ID No. _____ LLC/LLP, ID No. _____
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**List any parent, subsidiaries, or otherwise affiliated business entities of Contractor:**  
*(See definition below).*

\_\_\_\_\_

\_\_\_\_\_

**SECTION II.**

Has Contractor and/or any parent, subsidiary, or affiliated company, or agent thereof, made a campaign contribution(s) totaling \$250 or more in the aggregate to a current member of the South Coast Air Quality Management Governing Board or member/alternate of the MSRC in the 12 months preceding the date of execution of this disclosure?

Yes     No    **If YES, complete Section II below and then sign and date the form. If NO, sign and date below. Include this form with your submittal.**

**Campaign Contributions Disclosure, *continued*:**

Name of Contributor \_\_\_\_\_

Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
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Name of Contributor \_\_\_\_\_

Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
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Name of Contributor \_\_\_\_\_

Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
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Name of Contributor \_\_\_\_\_

Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
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**I declare the foregoing disclosures to be true and correct.**

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**DEFINITIONS**

**Parent, Subsidiary, or Otherwise Related Business Entity (2 Cal. Code of Regs., §18703.1(d).)**

- (1) Parent subsidiary. A parent subsidiary relationship exists when one corporation directly or indirectly owns shares possessing more than 50 percent of the voting power of another corporation.**
- (2) Otherwise related business entity. Business entities, including corporations, partnerships, joint ventures and any other organizations and enterprises operated for profit, which do not have a parent subsidiary relationship are otherwise related if any one of the following three tests is met:**
  - (A) One business entity has a controlling ownership interest in the other business entity.**
  - (B) There is shared management and control between the entities. In determining whether there is shared management and control, consideration should be given to the following factors:**
    - (i) The same person or substantially the same person owns and manages the two entities;**
    - (ii) There are common or commingled funds or assets;**
    - (iii) The business entities share the use of the same offices or employees, or otherwise share activities, resources or personnel on a regular basis;**
    - (iv) There is otherwise a regular and close working relationship between the entities; or**
  - (C) A controlling owner (50% or greater interest as a shareholder or as a general partner) in one entity also is a controlling owner in the other entity.**



BOARD MEETING DATE: March 6, 2015

AGENDA NO. 6

PROPOSAL: Support Utility Electric Vehicle Charging Program

SYNOPSIS: Southern California Edison (SCE) has applied to the California Public Utilities Commission (CPUC) to conduct a two-phase electric vehicle charging implementation and market education program “Charge Ready.” The first phase is a pilot program, which is limited in scope with the total cost to be recovered from the ratepayer and intended to provide valuable information related to further deployment of infrastructure and ratepayer benefits. The second phase would implement a much larger number of charging stations over four years based on the results from the Phase 1 Pilot Program. This action is to convey to the CPUC the SCAQMD’s support of SCE’s “Charge Ready” Phase 1 Pilot Program.

COMMITTEE: Technology, February 20, 2015; Recommended for Approval

RECOMMENDED ACTION:  
Support SCE’s “Charge Ready” Phase 1 Pilot Program.

Barry R. Wallerstein, D.Env.  
Executive Officer

MMM

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### **Background**

On March 23, 2012, Governor Brown issued Executive Order B-16-2012 which established the target benchmark of 1.5 million zero-emission vehicles on California roads by 2025. In order to achieve that scale of vehicle deployment, several organizations testified in CPUC Alternative Fueled Vehicle Rulemaking (R. 13-11-007) that the electric utilities should play a role in enabling plug-in electric vehicle (PEV) infrastructure. SCAQMD staff intervened in the proceeding, recommending some role for utilities but the scope and merits of their program should be judged on each utility’s proposal to the CPUC. In December 2014, the CPUC issued a decision (14-12-079)



revoking the previous blanket prohibition against the utilities ownership of PEV infrastructure and replacing it with a case-specific approach.

### **Proposal**

On October 30, 2014, SCE submitted to the CPUC an application to conduct a PEV charging infrastructure and market education program. Their “Charge Ready” Program would target long dwell-time locations (greater than four hours) and proceed in two phases if approved. Phase 1 would be a one-year pilot study to deploy up to 1,500 charging stations with complementary market education and outreach efforts. SCE would own and maintain the supporting infrastructure while customers would select, own, operate and maintain the charging stations. The pilot program would allow SCE to validate the cost estimates, customer benefits, identify any deployment issues and refine the education and outreach strategies including those for disadvantaged communities. The cost for the Phase 1 Pilot Program is estimated at \$22 million to be recovered in rates.

Phase 2 would implement the remainder of the 30,000 total charging stations over a four-year period based on the results from the pilot program. SCE would request approval for Phase 2 after the decision on Phase 1 in 2016. Phase 2 is estimated to cost approximately \$333 million in capital and operation and maintenance costs in ratepayer funding.

Since the Phase 1 Pilot Program is limited in scope (time, number of chargers and therefore risk), staff believes the pilot program should proceed. In particular, the program should specifically address issues relating to:

- encouraging workplace and multi-unit dwelling installations
- potential for cost-reductions with large orders
- incentives for owning, operating and maintaining the hardware
- benefits to the site owner and all ratepayers
- market education strategies, especially in disadvantaged communities

Staff recommends sending a support letter to the CPUC encouraging the decision to allow the Phase 1 Pilot Program with adequate assurances that SCE will transparently provide, at a minimum, the information above to enable greater PEV deployment.

### **Benefits to the SCAQMD**

The proposed Phase 1 Pilot Program and market outreach will help to deploy a greater number of zero-emission vehicles in the South Coast Air Basin. Enabling PEV infrastructure in greater numbers not only puts the state on course to meet the Governor’s goal of 1.5 million PEVs by 2025, but will also help the region to meet the nearer term goal of achieving the federal ozone standard by 2023.

### **Resource Impacts**

None.

BOARD MEETING DATE: March 6, 2015

AGENDA NO. 7

**PROPOSAL:** Approve SCAQMD Annual Investment Policy, Delegation of Authority to Appointed Treasurer to Invest SCAQMD Funds, Delegation of Authority to Appoint an Acting Treasurer, and Revised Treasury Operations Contingency Plan and Procedures

**SYNOPSIS:** State law requires a local government entity annually to provide a statement of investment policy for consideration at a public meeting and to renew its delegation of authority to its treasurer to invest or to reinvest funds of the local agency. In addition, the existing delegation of authority to appoint an acting Treasurer and Treasury Operations Contingency Plan and Procedures are being renewed and revised.

**COMMITTEE:** Investment Oversight, February 20, 2015, Recommended for Approval

**RECOMMENDED ACTIONS:**

1. Approve the attached Annual Investment Policy.
2. Approve the attached resolution to renew delegation of authority to the Los Angeles County Treasurer to invest and reinvest SCAQMD funds.
3. Approve the attached resolution to renew delegation of authority to appoint an Acting Treasurer.
4. Approve the attached revised Treasury Operations Contingency Plan and Procedures.

Barry R. Wallerstein, D.Env.  
Executive Officer

MBO:lg

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**Background**

*Investment Policy and Delegation of Authority to the LA County Treasurer*

Changes to the Government Code, which took effect in 1996, require that a statement of investment policy be transmitted annually to the Oversight Committee and legislative body of a local agency for consideration at a public meeting. In addition, state law

(Gov't. Code Section 53607) requires that a local agency's legislative body annually renew its delegation of authority to its Treasurer to invest or to reinvest funds of the local agency.

Board action on April 12, 1996 approved a recommendation to minimize SCAQMD investments in the Los Angeles County Pooled Surplus Investment Portfolio (PSIP), by directing staff to work with the Los Angeles County Treasurer (SCAQMD's Treasurer) to make specific investments on behalf of the SCAQMD. This change required the development of an annual statement of investment policy specific for the SCAQMD. SCAQMD's investment consultant, working with staff of the SCAQMD and the Los Angeles County Treasurer's office, developed the attached statement of investment policy. This policy, which is reviewed annually for possible changes, sets forth the investment guidelines for the SCAQMD with the objective of ensuring that funds are prudently invested to preserve principal and provide necessary liquidity while earning a market average rate of return.

*Delegation of Authority to Appoint an Acting Treasurer and Contingency Plan and Procedures*

In 1997, SCAQMD's Governing Board approved both a 1.) resolution delegating authority to the Executive Officer to appoint a Treasurer and the Treasurer, and 2.) Treasury Operations Contingency Plan and Procedures. The purpose of the resolution and Plan/Procedures is to protect SCAQMD funds in the event that the financial stability of Los Angeles County becomes jeopardized.

The resolution regarding delegation of authority allowed the Executive Officer to appoint an Acting Treasurer following the approval by the Administrative Committee at a special meeting held to discuss the financial impacts to SCAQMD. In the event of an emergency requiring immediate action, the Executive Officer was allowed to exercise such authority, notify the Governing Board, and convene a special meeting of the Administrative Committee as soon as possible. The Plan/Procedures described the specific steps that would be taken to protect SCAQMD funds.

The recommended revised resolution regarding delegation of authority and Plan/Procedures removes the Executive Officer as the primary and sole authority to appoint an acting Treasurer in the event of an emergency and grants this authority to the following: 1.) Chairman, 2.) Vice-Chairman, and 3.) Executive Officer. In the event of an emergency, the Chairman will have authority to appoint the Treasurer. If the Chairman is unavailable, the Vice-Chairman will have the authority. If the Vice-Chairman is unavailable, the Executive Officer will have the authority.

Additionally, upon further review by the Executive Officer after the Investment Oversight Committee meeting, revisions were made to the Introduction section of the

Plan/Procedures to remove unnecessary redundancies between the delegation Resolution and the Plan/Procedures.

### **Proposal**

The Investment Policy was substantially revised in 2013, including updating credit requirements, revising maturity limits, and clarifying diversification guidelines. The California Government Code Section 53601 was recently amended to allow investment in certain “supranational” debt obligations, although the Los Angeles County Treasurer has not yet amended their investment policy to allow for these investments, therefore no SCAQMD Investment Policy revisions are necessary and/or being recommended for 2015.

The County of Los Angeles has provided treasury management services to the SCAQMD since inception of the District. These services include providing banking services, processing electronic payments to SCAQMD, and the investment of the SCAQMD’s cash balances. Staff is recommending that the SCAQMD continue with the services provided by Los Angeles County Treasurer.

The current delegation of authority to the Executive Officer to appoint an acting Treasurer and the Treasury Operations Contingency Plan and Procedures were both approved in 1997 and are in need of renewal and revision. The revisions are intended to bring these documents up to date to ensure their effectiveness in the event of an unforeseen financial emergency. Staff is recommending the renewal of the delegation and the revised Plan/Procedures.

### **Resource Impacts**

Costs associated with SCAQMD treasury management operations are included in the FY 2014-15 Budget and will be included in the FY 2015-16 Budget.

### **Attachments**

1. SCAQMD Annual Investment Policy
2. Delegation of Authority to Appoint LA County Treasurer Resolution
3. Treasury Operations Contingency Plan and Procedures
4. Delegation of Authority to Appoint an Acting Treasurer

# South Coast Air Quality Management District

## Annual Investment Policy

### I. PURPOSE

This Annual Investment Policy (the “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 objective 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.

SCAQMD funds deposited with the Los Angeles County Treasurer may only be invested in the Los Angeles County Pooled Surplus Investment Portfolio or in Special Purpose Investments as authorized by this Policy. The SCAQMD Annual Investment Policy conforms to the California Government Code (the Code) as well as customary standards of prudent investment management. Irrespective of these Policy provisions, should the provisions of the Code be or become more restrictive than those contained herein, such provisions will be considered immediately incorporated in this Policy and adhered to.

### II. SCOPE

It is intended that this Policy cover all funds (except those funds invested in the two retirement systems covering SCAQMD employees and 457 deferred compensation plan funds) and investment activities under the direction of the SCAQMD and deposited with the Los Angeles County Treasurer.

The investment of bond proceeds will be governed by state law and the permitted investment provisions of relevant bond documents.

### III. OBJECTIVES

The objectives of this Annual Investment Policy, in priority order, are SAFETY OF PRINCIPAL, LIQUIDITY, AND MARKET RATE OF RETURN.

1. Safety of Principal. The primary objective of SCAQMD is to reduce credit risk and interest rate risk to a level that is consistent with safe and prudent investment management. Credit risk is the risk of default or the inability of a debt issuer to make interest or principal payments when due. Credit risk is minimized by investing in only permitted investments and diversifying the portfolio according to this Annual Investment Policy so that no one type of issuer or issue will have a disproportionate impact on the portfolio. Interest rate risk is associated with price volatility introduced by extending the

maturity of instruments purchased. Interest rate risk is controlled by limiting the maturity exposure to acceptable levels.

2. Liquidity. SCAQMD funds will be invested to ensure that normal cash needs and scheduled extraordinary cash needs can be met. Cash flow forecasting will be used to determine the current and projected future needs of SCAQMD and the ability of SCAQMD to make Special Purpose Investments. SCAQMD shall invest funds in instruments for which there is a secondary market and which offer the flexibility to be easily sold at any time with minimal risk of loss of either the principal or interest based upon then prevailing interest rates.
3. Market Rate of Return. SCAQMD's funds shall be invested to attain a market average rate of return through economic cycles consistent with maintaining risk at a prudent level.

These objectives are to be achieved in part through the diversification of SCAQMD investments among the Los Angeles County Pooled Surplus Investment Portfolio and Special Purpose Investments. The combination of the Pooled Surplus Investment Portfolio and the Special Purpose Investment of SCAQMD funds in the State of California Local Agency Investment Fund will provide significant diversification, safety of principal and liquidity for the programs of the SCAQMD. Other Special Purpose Investments in an SCAQMD separate account will experience market price changes due to interest rate risk consistent with longer maturity investments that are permitted by this policy.

#### **IV. RESPONSIBILITIES**

*The Governing Board.* The SCAQMD Governing Board is responsible for establishing the Annual Investment Policy and ensuring investments are made in compliance with this Policy. This Policy shall be reviewed annually by the Governing Board at a public meeting pursuant to Section 53646(g) of the California Government Code. The Los Angeles County Treasurer has been appointed Treasurer of SCAQMD. The Treasurer shall be appointed at least annually by the SCAQMD Governing Board.

*The Treasurer.* The Treasurer is responsible for making investments and for compliance with this Policy pursuant to the delegation of authority to invest funds or to sell or exchange securities made in accordance with Code Section 53607. The Treasurer shall submit a monthly report of investment transactions to the SCAQMD Governing Board. If the SCAQMD Governing Board appoints as Treasurer someone other than the Los Angeles County Treasurer, the new

Treasurer shall be responsible for making investments and for compliance with this Policy or such other Policy which may be adopted by the Governing Board at that time.

*The Chief Financial Officer.* The Chief Financial Officer, based on information provided by the Treasurer, shall submit a quarterly report to the Governing Board pursuant to Code Section 53646(g). The Chief Financial Officer is responsible for preparation of cash flow forecasts for SCAQMD funds as described below. The Chief Financial Officer will recommend specific individual investments for the Special Purpose Investments to be made by the Treasurer.

*The Investment Oversight Committee.* The SCAQMD Governing Board shall appoint an Investment Oversight Committee. The duties and responsibilities of the Investment Oversight Committee shall consist of the following:

1. Annual review of SCAQMD's Investment Policy before it is considered by the Governing Board, and recommend revisions, as necessary, to the Chief Financial Officer.
2. Quarterly review of SCAQMD's investment portfolio for conformance with SCAQMD's Annual Investment Policy diversification and maturity guidelines, and make recommendations to the Chief Financial Officer as appropriate.
3. Provide comments to the SCAQMD Chief Financial Officer regarding potential investments and potential investment strategies.
4. Perform such additional duties and responsibilities as may be required from time to time by specific action and direction of the Governing Board.

It shall not be the purpose of the Investment Oversight Committee to advise on particular investment decisions of SCAQMD.

## **V. IMPLEMENTATION**

This 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.

### *A. Standard of Care.*

SCAQMD's Governing Board or persons authorized to make investment decisions on behalf of SCAQMD are trustees and fiduciaries subject to the

prudent investor standard, as required by Code Section 53600.3, and shall be applied in the context of managing an overall portfolio. SCAQMD's investment professionals acting in accordance with written procedures and the Annual Investment Policy and exercising due diligence shall be relieved of personal responsibility for an individual security's credit risk or market price changes, provided deviations from expectations are reported in a timely fashion and appropriate action is taken to control developments.

The Prudent Investor Standard: When investing, reinvesting, purchasing, acquiring, exchanging, selling, or managing public funds, a trustee shall act with care, skill, prudence, and diligence under the circumstances then prevailing, including but not limited to, the general economic conditions and the anticipated needs of the agency, that a prudent person acting in a like capacity and familiarity with those matters would use in the conduct of funds of a like character and with like aims, to safeguard the principal and maintain the liquidity needs of the agency.

*B. Investable Funds.*

Investable Funds for purposes of this Policy are the SCAQMD general, special revenue, trust, agency and enterprise funds that are available for investment at any one time including any estimated bank account float. Investable Funds are idle or surplus funds of the SCAQMD including all segregated funds. All bond proceeds are excluded from Investable Funds. The Cash Flow Horizon is the time period in which the SCAQMD cash flow can be reasonably forecast. This Policy establishes the Cash Flow Horizon for SCAQMD idle or surplus funds to be three (3) years. The SCAQMD cash flow forecast must be updated at least every six months.

When the SCAQMD Chief Financial Officer determines that the cash flow forecast can be met, the Treasurer, at the request of the Chief Financial Officer, may invest a maximum of up to 75% of the minimum amount of funds available for investment during the Cash Flow Horizon in Special Purpose Investments ("SPI"), exclusive of investments in the State of California Local Agency Investment Fund ("LAIF"), in a separate account outside of the Pooled Surplus Investment ("PSI") Portfolio, in accordance with this Policy.

*C. Authorized Investments.*

Authorized investments shall match the general categories established by the California Government Code Sections 53601 et seq. and 53635 et seq.



Authorization for specific instruments within these general categories as well as portfolio concentration and maturity limits are established below as part of this Policy. No investments shall be authorized that have the possibility of returning a zero or negative yield when held to maturity; for example: inverse floaters, range notes or interest only STRIPS. As the California Government Code is amended, this Policy shall likewise become amended.

SCAQMD investments or deposits in the County of Los Angeles PSI Portfolio are governed by the County of Los Angeles Treasurer's Investment Policy for Pooled Surplus Funds. SCAQMD investments or deposits in the LAIF are governed by the investment policy and guidelines for LAIF as established by the Office of the Treasurer for the State of California. Investments in LAIF are an SPI investment and are limited in amount to the investment limits established for LAIF by the California State Treasurer.

SCAQMD funds and segregated funds that are invested by the Treasurer in an SPI separate account outside of the County of Los Angeles PSI Portfolio or LAIF are subject to this Policy. SCAQMD funds invested in an SPI separate account will be governed by various approved lists that may be established and maintained by the Los Angeles County Treasurer or the SCAQMD's Investment Advisor.

*D. Maximum Maturities.*

The maximum maturity of any SPI investment shall be five (5) years. The weighted average maturity of the SPI separate account portfolio may not exceed three (3) years. Maturity shall mean the nominal maturity of the security, or the unconditional put option date, if the security contains such provision. Term or tenure shall mean the remaining time to maturity when purchased.

*E. Permitted Investments.*

1. U.S. Treasuries.

Direct obligations of the United States of America and securities which are fully and unconditionally guaranteed as to the timely payment of principal and interest by the full faith and credit of the United States of America.

U.S. Treasury coupon and principal STRIPS are not considered to be derivatives for the purpose of this Annual Investment Policy and are, therefore, permitted investments pursuant to the Annual Investment Policy.

2. Federal Agencies and U.S. Government Sponsored Enterprises.

Obligations, participations, or other instruments of, or issued by, a federal agency or a United States government sponsored enterprise.

3. Los Angeles County Pooled Surplus Investment Portfolio.

The County of Los Angeles Pooled Surplus Investment Portfolio is a pooled fund managed by the County Treasurer whose permitted investments are authorized in the Code and are governed by the Treasurer's Investment Policy with credit requirements and maturity limits established by the County Treasurer and adopted by the County Board of Supervisors.

4. State of California Local Agency Investment Fund.

LAIF is a pooled fund managed by the Office of the State Treasurer whose permitted investments are identified in the Code and whose credit requirements and maturity limits are established by the State Treasurer.

5. Shares of Money Market Mutual Funds.

Credit requirements for approved money market funds shall be limited to ratings of AAA by at least two nationally recognized statistical rating organizations (NRSRO) or managed by an investment advisor registered with the Securities and Exchange Commission with not less than five years' experience and with assets under management in excess of five hundred million dollars (\$500,000,000), and such investment may not represent more than ten percent (10%) of the total assets in the money market fund.

6. Bankers' Acceptances.

Bankers' acceptances must be issued by national or state-chartered banks or a state-licensed branch of a foreign bank. Eligible bankers' acceptances shall have the highest ranking or the highest letter and number rating as provided for by a NRSRO.

Maximum maturities for bankers' acceptances are 180 days.

7. Negotiable Certificates of Deposit.

Negotiable certificates of deposit must be issued by national or state-chartered banks, a federally- or state-licensed branch of a foreign bank, savings associations and state or federal credit unions. Negotiable CDs must be rated at least A or its equivalent by at least one NRSRO.

The SCAQMD will not purchase negotiable certificates of deposit of a savings association or credit union as Special Purpose Investments if an SCAQMD Board member or a member of management staff, with investment authority, also serves on the Board of Directors or a committee of that savings association or credit union.

Maximum maturities for all negotiable certificates of deposit are five (5) years.

#### 8. Commercial Paper.

Commercial paper of “prime” quality of the highest ranking or of the highest letter and number rating as provided for by a NRSRO. The entity that issues the commercial paper shall meet all of the following conditions in either paragraph a. or paragraph b.:

a. The entity meets the following criteria:

- i. Is organized and operating in the United States as a general corporation.
- ii. Has total assets in excess of one billion dollars (\$1,000,000,000).
- iii. Has debt other than commercial paper, if any, that is rated "A" or higher, or the equivalent, by a NRSRO.

b. The entity meets the following criteria:

- i. Is organized within the United States as a special purpose corporation, trust, or limited liability company.
- ii. Has program wide credit enhancements including, but not limited to, over collateralization, letters of credit, or surety bond.
- iii. Has commercial paper that is rated “A-1”, or the equivalent, by at least two NRSROs.

Investments may not represent more than ten percent (10%) of the outstanding paper of the issuing corporation.

Maximum maturities for commercial paper are 270 days.

#### 9. Medium Term Maturity Corporate Securities.

Medium-term corporate notes shall be rated in a rating category "A" or its equivalent or better by a NRSRO.

Floating rate medium term notes may be used if interest resets at least quarterly.

Maximum maturities for medium term maturity corporate securities are five years.

10. Mortgage Securities or Asset-backed Securities.

Credit requirements for any mortgage pass-through security, collateralized mortgage obligations, mortgage-backed or other pay-through bond, equipment lease-backed certificate, consumer receivable pass-through certificate, or consumer receivable backed bond shall be rated “AAA” or its equivalent or better by a nationally recognized rating service, and issued by an issuer having a “AA” or better rating by a NRSRO for its long-term debt.

The maximum maturity for Mortgage or Asset-backed Securities shall be five years.

11. Repurchase Agreements.

All repurchase transactions must be collateralized by U.S. Treasuries or Agencies with a market value of 102% for collateral marked to market daily, entered into with a broker-dealer which is a recognized primary dealer and evidenced by a broker-dealer master purchase agreement signed by the County Treasurer and approved by SCAQMD.

The maximum maturity of a repurchase agreement shall be 30 days.

12. Reverse Repurchase Agreements.

Reverse repurchase agreements are not allowed except as part of investments in the County of Los Angeles Pooled Surplus Investment Portfolio and the State of California Local Agency Investment Fund.

13. Variable and Floating Rate Securities.

Variable and floating rate securities are instruments that have a coupon or interest rate that is adjusted periodically due to changes in a base or benchmark rate. Investments in floating rate securities must utilize commercially available U.S. denominated indices such as U. S. Treasury bills or Federal Funds. Investments in floating rate securities whose reset is calculated using more than one of the above indices are not permitted, i.e. dual index notes.

Variable and Floating Rate Securities that are priced based on a single common index are not considered derivative securities.

The maximum maturity is five years.

14. Obligations of the State of California or any local agency within the state.

Permitted obligations will include bonds payable solely out of revenues from a revenue producing property owned, controlled or operated by the state or any local agency, or by a department, board, agency or authority of the state or any local agency.

Obligations of the State of California or other local agencies within the state must be rated at least A by a NRSRO.

*F. Diversification Guidelines.*

Diversification limits ensure that at the time of investment the SCAQMD's portfolio is not unduly concentrated in the securities of one type, industry, or issuer, thereby assuring adequate portfolio liquidity should one sector or issuer experience difficulties. The diversification limits outlined below for an individual investment instrument and issuer/counterparty are expressed as the maximum percentage of the total SCAQMD's portfolio invested by the Los Angeles County Treasurer. Maximum percentage limits shall apply at the time of purchase and allocations in excess of maximum percentages due to fluctuations in portfolio size will not be considered out of compliance with this Policy.

<u>Instrument</u>	<u>Maximum % of Portfolio</u>
1. U.S. Treasuries	100%
2. Federal Agencies & U.S. Government Sponsored Enterprises	100%
3. Los Angeles County Pooled Surplus Investment Portfolio	100%
4. State of California Local Agency Investment Fund	100%
5. Shares of Money Market Mutual Funds	15%
6. Bankers Acceptances	40%
7. Negotiable Certificates of Deposit	30%
8. Commercial Paper	25%
9. Medium Term Maturity Corporate Securities	30%
10. Mortgage Securities or Asset-backed Securities	20%
11. Repurchase Agreements	50%
12. Reverse Repurchase Agreements*	Not Allowed
13. Variable and Floating Rate Securities	30%
14. Obligations of the State of California or any California local agency	30%

\* See Section V(E)(12).

<u>Issuer/Counterparty</u>	<u>Maximum % of Portfolio</u>
Any one Federal Agency or U.S. Government Sponsored Enterprise	50%
Securities of any single non-government issuer or its related entities, regardless of security type	5%
Securities of any State of California or California local agency	5%
Any one Repurchase Agreement or other collateralized counterparty name	50%

**G. Investment Agreements (For Bond Funds Only).**

Investment Agreements or Fully Flexible Repurchase Agreements shall provide a fixed spread to an index or a fixed rate of return with liquidity, usually one-to-seven day's withdrawal notice with no penalties, to meet cash flow needs of the SCAQMD. Investment Agreements may be with any bank, insurance company or broker/dealer, or any corporation whose principal business is to enter into such agreements, if:

1. At the time of such investment:
  - a. such bank has an unsecured, uninsured and unguaranteed obligation rated "AA" or its equivalent or better by at least two NRSROs, or
  - b. such insurance company or corporation has an unsecured, uninsured and unguaranteed claims paying ability rated "AAA" or its equivalent by at least two NRSROs, or
  - c. such bank or broker/dealer has an unsecured, uninsured and unguaranteed obligation rated "A" or its equivalent or better by at least two NRSROs (and with respect to such broker/dealer shall be rated of the highest short-term ratings by at least two NRSROs); provided, that such broker/dealer or "A" rated bank also collateralize the obligation under the investment agreement with U.S. Treasuries or Agencies.
2. The agreement shall include a provision to the effect that if any rating of any such bank, insurance company, broker/dealer or corporation is downgraded below the rating existing at the time such agreement was entered into, the SCAQMD shall have the right to terminate such agreement.
3. Collateralization shall be at a minimum of 102%, marked to market, at a minimum, weekly.

The maximum term for an Investment Agreement for bond proceeds will be governed by the permitted investment language of the bond indenture.

*H. Rating Downgrades.*

Securities that are currently under “Credit Watch-Negative” for downgrade below the minimum credit criteria of this Policy by any NRSROs are not permitted for purchase for the SPI investments under this Policy.

The SCAQMD SPI separate account may from time to time be invested in a security whose rating is downgraded below the quality criteria permitted by the Annual Investment Policy. Any security held as an investment whose rating falls below the investment guidelines or whose rating is put on notice for possible downgrade shall be immediately reviewed for action by the Chief Financial Officer. The decision to retain the security until maturity, sell (or put) the security, or other action shall be approved by the Treasurer. Minimum credit criteria shall apply at the time of purchase.

*I. Securities Safekeeping.*

Securities shall be deposited for safekeeping with a third party custodian in compliance with Code Section 53608.

*J. Review and Monitoring of Investments.*

The Chief Financial Officer will submit to the Governing Board the quarterly reports on investments prepared by the Treasurer for the Pooled Surplus Investment Portfolio and SCAQMD funds invested in the State Local Agency Investment Fund and Special Purpose Investments. The Chief Financial Officer will review at least monthly the transactions and positions of SCAQMD funds invested in Special Purpose Investments outside of the Local Agency Investment Fund or the Pooled Surplus Investment Portfolio.

Approved March 6, 2015

**RESOLUTION NO. 15-\_\_\_\_\_**

A Resolution of the South Coast Air Quality Management District Board delegating authority to the Treasurer of the County of Los Angeles to invest and reinvest funds of the South Coast Air Quality Management District.

WHEREAS, the Governing Board of the South Coast Air Quality Management District desires to reaffirm the appointment of the Treasurer of the County of Los Angeles as Treasurer of the South Coast Air Quality Management District; and

WHEREAS, the Governing Board of the South Coast Air Quality Management District pursuant to Section 40527 of the Health and Safety Code has authority to appoint a Treasurer; and

WHEREAS, the Governing Board of the South Coast Air Quality Management District pursuant to Section 53607 of the Government Code is required to annually renew the delegation of authority to its Treasurer to invest or to reinvest funds, or sell or exchange securities of the District;

THEREFORE, BE IT RESOLVED that the Governing Board of the South Coast Air Quality Management District hereby delegates to the Treasurer of the County of Los Angeles the authority to invest and to reinvest funds of the South Coast Air Quality Management District.

AYES:

NOES:

ABSENT:

Date: \_\_\_\_\_

\_\_\_\_\_  
Clerk of the District Board



# TREASURY OPERATIONS CONTINGENCY PLAN AND PROCEDURES

## Introduction

The following Contingency Plan and Procedures may be implemented by the South Coast Air Quality Management District (AQMDSCAQMD) to protect the safety and liquidity of AQMDSCAQMD funds and to protect AQMDSCAQMD from disruptions to ongoing operations.

The Contingency Plan and Procedures can only be initiated by the AQMDSCAQMD Executive Officer Appointing Authority (Administrative Committee, Chairman, Vice-Chairman, or Executive Officer), upon the recommendation of the Director of Finance and concurrence of the Administrative Committee, if: ~~1a)~~ the financial stability of Los Angeles County may jeopardize AQMDSCAQMD funds invested through the Los Angeles County Treasurer and/or ~~2b.)~~ the Los Angeles County Treasurer, as Treasurer of AQMDSCAQMD, can no longer provide the treasury services currently provided in a satisfactory manner which presently include banking, investment, and paying agent services.

If implemented, the Executive Officer Appointing Authority will be acting under the authority granted by Resolution 9715-32, approved by the AQMDSCAQMD Governing Board on ~~December 12, 1997~~ March 3, 2015, and which grants authority to the Executive Officer, following the approval at a special meeting of the Administrative Committee, to appoint either the Director of Finance or the Controller as Acting Treasurer. If, however, in the judgment of the Executive Officer immediate action must be taken to safeguard AQMD funds, the Executive Officer shall exercise this authority and convene a special meeting of the Administrative Committee as soon as possible to discuss the financial impacts and actions taken. In addition, the actions taken under this resolution will be discussed by the Governing Board at a special or the next regularly scheduled meeting of the Board.

## Procedures

1. The Executive Officer Appointing Authority shall appoint either the Director of Finance Chief Financial Officer or Controller of the AQMDSCAQMD as the Acting Treasurer in a written communication to the Governing Board, the Director of Finance Chief Financial Officer, the Controller, the Los Angeles County Treasurer, and the State of California Treasurer.
2. The Acting Treasurer will immediately contact the Los Angeles County Treasurer and Office of the State Treasurer, Local Agency Investment Fund (LAIF), (916-653-3001), to coordinate the change of the PIN NUMBER to

take control of the AQMDSCAQMD funds invested in LAIF by the Los Angeles County Treasurer. The Acting Treasurer will instruct the Los Angeles County Treasurer to prepare and submit a new “Authorization for Transfer of Funds” with LAIF to remove the Los Angeles County Treasurer staff as authorized signatories and to add SCAQMD staff.

3. The Acting Treasurer will provide to the bank (currently Bank of America) a copy of Board Resolution 9715-32, a copy of the Executive Officers Appointing Authority’s appointment letter, and written instructions to establish a new Concentration Account for receipt and disbursement of AQMDSCAQMD funds.
4. The Acting Treasurer shall complete and provide to AQMDSCAQMD’s bank signature cards for the Concentration Account and instruct the bank to:
  - a) Delink the zero balance accounts currently connected to the County of Los Angeles and connect them to the new Concentration Account.
  - b) Notify the lock boxes of the change of account numbers; and,
  - c) Add the new Concentration Account to the bank’s electronic network (~~BAMTRAC for B of A~~) so AQMDSCAQMD can track the ~~the~~ transactions for the new ~~Concentration~~ Account.
5. The Acting Treasurer shall temporarily disable electronic payments through SCAQMD’s website and Los Angeles County Treasurer’s third-party electronic payment processor and take actions to establish an outside third-party payment processor.
6. The Acting Treasurer shall coordinate the updating of SCAQMD account information contained within the applicable federal grant drawdown systems so that any further drawdowns are deposited to the new SCAQMD Concentration Account.
- 5.7. The Acting Treasurer shall order a supply of AQMDSCAQMD checks for the new Concentration Account and set up a daily sweep of the Concentration Account into an appropriate investment vehicle for overnight investments.
- 6.8. The Acting Treasurer shall work with the AQMDSCAQMD investment consultant on the investment of AQMDSCAQMD funds consistent with the AQMDSCAQMD Annual Investment Policy.
- 7.9. The Acting Treasurer shall initiate all actions necessary to transfer or recover all other AQMDSCAQMD funds invested by the Los Angeles County Treasurer in the Pooled Surplus Investment Fund or in Special Purpose Investments, deposit such funds in the Consolidated Account, and direct the

investment of such funds consistent with the ~~AQMD~~SCAQMD Annual Investment Policy.

8.10. The Acting Treasurer shall report to the ~~AQMD~~SCAQMD ~~Board~~Administrative Committee- all actions taken and the status of all ~~AQMD~~SCAQMD funds at the next possible ~~emergency~~special or regularly-scheduled ~~Board~~Administrative Committee meeting.

~~Adopted December 12, 1997~~

Adopted March 3, 2015

**RESOLUTION NO. 15-\_\_**

A Resolution of the South Coast Air Quality Management District Governing Board delegating authority to appoint either the Chief Financial Officer or Controller as Acting Treasurer of the South Coast Air Quality Management District (SCAQMD) in the event that: a.) the financial stability of Los Angeles County jeopardizes South Coast Air Quality Management District funds invested through the Los Angeles County Treasurer, and/or b.) the Los Angeles County Treasurer can no longer provide the treasury services currently provided in a satisfactory manner.

**WHEREAS**, the Governing Board of the South Coast Air Quality Management District desires to establish the necessary emergency authorities and procedures to protect the safety and liquidity of the South Coast Air Quality Management District funds and to protect the South Coast Air Quality Management District from disruptions to ongoing operations; and

**WHEREAS**, the Governing Board of the South Coast Air Quality Management District pursuant to Section 40527 of the Health and Safety Code has authority to appoint a Treasurer;

**THEREFORE, BE IT RESOLVED** that the Governing Board of the South Coast Air Quality Management District hereby delegates to the Administrative Committee the authority to appoint the Chief Financial Officer, or if he is unable to serve, the Controller, as Acting Treasurer for the sole purpose of implementing the Treasury Operations Contingency Plan and Procedures until a permanent Treasurer is appointed by the Board.

**THEREFORE, BE IT FURTHER RESOLVED** that in the event that immediate action must be taken to safeguard SCAQMD funds, the Governing Board of the South Coast Air Quality Management District hereby delegates, in the following order, as available, 1.) Chairman, 2.) Vice-Chairman, or 3.) Executive Officer, the authority to appoint the Chief Financial Officer, or if he is unable to serve, the Controller, as Acting Treasurer for the sole purpose of implementing the Treasury Operations Contingency Plan and Procedures until a permanent Treasurer is appointed by the Board. Actions taken under this authority shall require a special meeting of the Administrative Committee to be convened as soon as possible to discuss the financial impacts and actions taken.

AYES:

NOES:

ABSENT:

DATE:

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CLERK OF THE BOARDS

BOARD MEETING DATE: March 6, 2015

AGENDA NO. 8

**PROPOSAL:** Appropriate Funds from Designation for Litigation and Enforcement and Authorize Amending/Initiating Contracts with Outside Counsel and Specialized Legal Services

**SYNOPSIS:** Legal is currently being assisted in environmental lawsuits by outside law firms and in other matters requiring specialized legal counsel and services. This action is to appropriate \$500,000 from the Designation for Litigation and Enforcement, to FY 2014-15 Legal Budget and amend or initiate contracts to expend these funds with prequalified counsel approved by the Board as well as specialized legal counsel and services.

**COMMITTEE:** Administrative, February 13, 2015, Recommended for Approval

**RECOMMENDED ACTIONS:**

1. Appropriate \$500,000 from the Designation for Litigation and Enforcement to Legal's FY 2014-15 Budget.
2. Increase Legal's FY 2014-15 Services and Supplies Major Object, Professional and Special Services account by \$500,000.
3. Authorize the Chairman or the Executive Officer, depending on whether the amount exceeds \$75,000, to amend or initiate contracts with prequalified counsel approved by the Board as well as specialized legal counsel and services in a total amount not to exceed \$1,279,500 in FY 2014-15, as the need arises.

Barry R. Wallerstein, D.Env.  
Executive Officer

**Background**

The FY 2014-15 Budget for Legal included \$279,500 for litigation expenses in environmental law cases and specialized legal counsel and services. In response to unexpected litigation costs, the Board appropriated an additional \$500,000 at the October 2014 Governing Board meeting. Now, environmental litigation and special litigation matters require additional funding. The monies for these matters will be expended on lawsuits and other legal proceedings, including Exide Technologies; amendments to Rule 444; a hearing before the Surface Transportation Board on approval of the Railroad Rules; and a challenge to permitting a tank storage project at the Phillips 66 refinery in Carson—which will be reimbursed by Phillips 66 pursuant to Rule 301(aa).

It is expected that expenses in these matters, and the other matters handled by specialized legal counsel, will require an additional amount up to \$500,000. In part, these amounts will be reimbursed, specifically for the litigation costs in the Phillips 66 matter; but under Rule 301(aa), Phillips 66 is required to provide reimbursement once the matter is completed. Accordingly, Legal is requesting the transfer of additional funds in the amount of \$500,000, for a total expected expenditure of \$1,279,500 this fiscal year.

**Proposal**

In order to defend on-going litigation, it is necessary to appropriate additional funds for expenditure by outside counsel. It is expected that on-going lawsuits, and new litigation that is possible, as well as matters requiring specialized legal counsel and services, will require an additional \$500,000 to be appropriated to prequalified counsel approved by the Board, as well as specialized legal counsel and services, as the need arises.

**Resource Impacts**

Sufficient funds will be available in Legal's FY 2014-15 Budget upon approval of this Board letter.

BOARD MEETING DATE: March 6, 2015

AGENDA NO. 9

**PROPOSAL:** Approve Salary Adjustments for Executive Officer and General Counsel and Revisions to Employment Contracts

**SYNOPSIS:** The Personnel Committee recommends the Executive Officer and General Counsel receive the same salary adjustments to those provided to employees in the Technical/Enforcement & Office Clerical and Maintenance bargaining units and Management and Confidential, effective with the first pay period encompassing January 1, 2015. Funds for these increases are available in the FY 2014-15 Budget.

**COMMITTEE:** Personnel, February 13, 2015; Recommended for Approval

**RECOMMENDED ACTION:**

Approve the adjustments to base salary for Executive Officer and General Counsel effective with the first pay period encompassing January 1<sup>st</sup>, 2015, and amend their employment contracts to reflect these salary increases.

Dr. William A. Burke, Ed.D.  
Chair, Personnel Committee

WJJ

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**Background**

The Personnel Committee meets periodically to review the performance of the Executive Officer and General Counsel and recommends adjustments to base salary and other terms and conditions of employment as appropriate. On December 5, 2014, the Board approved a three-year MOU with Teamsters Local 911 and provisions for Management and Confidential employees providing for annual base salary increases of 2%, 1.5%, and 1.5% effective the first pay period encompassing January 1<sup>st</sup> of each year. Additionally, the Teamsters MOU and provisions applying to Management and Confidential employees

requires employees pay the remaining portion of the employee's share of the retirement contribution over the three-year term with offsetting increases to salary.

### **Proposal**

The Executive Officer and General Counsel's base salary will be increased 2%, 1.5%, and 1.5%, effective the start of the pay period encompassing January 1<sup>st</sup> of 2015, 2016, and 2017, respectively. Since the Executive Officer has reached 30 years of service, no other adjustment is proposed.

However, the amount of the employee's share of the retirement contribution paid by SCAQMD for the General Counsel will be divided into three equal portions. The first portion will be added to General Counsel's obligations effective the start of the pay period encompassing July 1<sup>st</sup>, 2015; the second portion effective the start of the pay period encompassing July 1<sup>st</sup>, 2016; and the final portion will become effective the start of the pay period encompassing July 1<sup>st</sup>, 2017. With the start of the pay periods encompassing July 1<sup>st</sup> of 2015, 2016, and 2017, respectively, General Counsel will receive a base salary increase equivalent to the amount of the additional retirement obligation assumed under this provision. At the time General Counsel reaches 30 years of SBCERA service credit, the salary increases to base salary previously received pursuant to this section will be terminated and the General Counsel's base salary will be adjusted accordingly.

### **Resource Impacts**

There is sufficient funding available in the FY 2014-15 Budget.

### **Attachment**

- A. Proposed Amendments to Executive Management Agreements for Executive Officer and General Counsel



ATTACHMENT A

Proposed Amendments to Executive Management Agreements for  
Executive Officer and General Counsel

Proposed Amendment to Executive Management Agreement for Executive Officer:

I. TERMS OF AGREEMENT

B. \* \* \* \* \*

The Executive Officer's base salary will be increased 2%, 1.5%, and 1.5%, effective the start of the pay period encompassing January 1<sup>st</sup> of 2015, 2016, and 2017, respectively.

Proposed Amendments to Executive Management Agreement for General Counsel:

I. TERMS OF AGREEMENT

B. \* \* \* \* \*

The General Counsel's base salary will be increased 2%, 1.5%, and 1.5%, effective the start of the pay period encompassing January 1<sup>st</sup> of 2015, 2016, and 2017, respectively.

C. \* \* \* \* \*

The amount of the employee's share of the retirement contribution paid by SCAQMD for the General Counsel shall be divided into three equal portions. The first portion shall be added to General Counsel's obligations effective the start of the pay period encompassing July 1<sup>st</sup>, 2015; the second portion effective the start of the pay period encompassing July 1<sup>st</sup>, 2016; and the final portion shall become effective the start of the pay period encompassing July 1<sup>st</sup>, 2017. With the start of the pay periods encompassing July 1<sup>st</sup> of 2015, 2016, and 2017, respectively, General Counsel shall receive a base salary increase equivalent to the amount of the additional retirement obligation assumed under this provision. At the time General Counsel reaches 30 years of SBCERA service credit, the salary increases to base salary previously received pursuant to this section shall be terminated and the General Counsel's base salary will be adjusted accordingly.

BOARD MEETING DATE: March 6, 2015

AGENDA NO. 10

PROPOSAL: Legislative and Public Affairs Report

SYNOPSIS: This report highlights the January 2015 outreach activities of Legislative and Public Affairs, which include: an Environmental Justice Update, Community Events/Public Meetings, Business Assistance, and Outreach to Business and Federal, State, and Local Government.

COMMITTEE: No Committee Review

RECOMMENDED ACTION:  
Receive and file.

Barry R. Wallerstein, D.Env.  
Executive Officer

LBS:DJA:MC:DM:jf

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## **BACKGROUND**

This report summarizes the activities of Legislative and Public Affairs for January 2015. The report includes four major areas: Environmental Justice Update; Community Events/Public Meetings (including the Speakers Bureau/Visitor Services, Communications Center, and Public Information Center); Business Assistance; and Outreach to Business and Federal, State and Local Governments.

## **ENVIRONMENTAL JUSTICE UPDATE**

The following are key environmental justice-related activities in which staff participated during the month of January. These events involve communities that may suffer disproportionately from adverse air quality impacts.

### January 14

- Staff participated in the American Lung Association's planning meeting for their Inland Counties Lung Force Expo health fair. SCAQMD will be participating in the Lung Force Expo health fair to promote air quality awareness.

### January 15

- Staff attended the Healthy San Bernardino meeting and provided information on current programs for residents, including the upcoming residential lawn mower exchanges and the Clean Communities Plan fireplace gas log buy-down program. Staff also displayed and demonstrated a fuel cell vehicle.

### January 20

- SCAQMD staff attended the Long Beach Alliance for Children with Asthma Coalition meeting and provided information on the upcoming SCAQMD Environmental Justice For All Conference.

### January 21

- Staff participated in the Asian Youth Center Community Partnership meeting in San Gabriel and provided information on SCAQMD community based programs such as, Check Before You Burn, and the upcoming SCAQMD Environmental Justice For All Conference.

### January 22

- SCAQMD staff attended the ribbon cutting for the City of Coachella Corporate Yard EV Charging Station funded by AB 1318 (V.M. Perez) mitigation fees. Staff displayed and demonstrated the Volt hybrid electric vehicle and provided information about SCAQMD to approximately 40 high school students.

### January 29

- Staff attended the Inland Empire Asthma Coalition meeting and provided background information on SCAQMD and several community-based incentive programs including, Check Before You Burn and the Voucher Incentive Program, that encourage residents living in certain areas to switch to cleaner burning natural gas log fireplaces.

## **COMMUNITY EVENTS/PUBLIC MEETINGS**

Each year, thousands of residents engage in valuable information exchanges through events and meetings that SCAQMD sponsors either alone or in partnership with others. Attendees typically receive the following information:

- Tips on reducing their exposure to smog and its health effects;
- Clean air technologies and their deployment;
- Invitations or notices of conferences, seminars, workshops and other public events;
- Ways to participate in SCAQMD's rule and policy development; and
- Assistance in resolving air pollution-related problems.

SCAQMD staff attended and/or provided information and updates at the following events:

January 17

- SCAQMD’s 2<sup>nd</sup> Annual Martin Luther King Jr. “Day of Service Forum,” California Science Center Los Angeles.

**SPEAKERS BUREAU/VISITOR SERVICES**

SCAQMD regularly receives requests for staff to speak on air quality-related issues from a wide variety of organizations, such as trade associations, chambers of commerce, community-based groups, schools, hospitals and health-based organizations. SCAQMD also hosts visitors from around the world who meet with staff on a wide range of air quality issues.

January 13

- 23 representatives from the Republic of China’s Environmental Protection Administration, Department of Environmental Monitoring, hosted by Cal Poly Pomona, visited SCAQMD headquarters where they received an overview on the agency, air quality standards, planning & monitoring, participated in a discussion on alternative fueled vehicles, and toured the laboratory.
- SCAQMD staff visited the Western Academy School of Robotics in Hemet and spoke to 60 students, where they presented an overview on the agency, air quality, and conducted a dry ice air quality demonstration to visually explain how air pollution is formed in our region.

January 30

- Fifteen students from the Western Academy School of Robotics in Hemet visited SCAQMD headquarters where they received an overview on the agency and air quality, participated in a discussion on alternative fueled vehicles, and toured the laboratory.

**COMMUNICATION CENTER STATISTICS**

The Communication Center handles calls on the SCAQMD main line, 1-800-CUT-SMOG<sup>®</sup> line and Spanish line. Calls received in the month of January 2015 are summarized below:

Main Line Calls	2,490
1-800-CUT-SMOG <sup>®</sup> Line	1,652
After Hours Calls*	531
Spanish Line Calls	<u>42</u>
Total Calls	4,715

\* Saturdays, Sundays, holidays, and after 7:00 p.m. Monday through Friday.

**PUBLIC INFORMATION CENTER STATISTICS**

The Public Information Center (PIC) handles phone calls and walk-in requests for general information. Information for the month of January 2015 is summarized below:

Calls Received by PIC Staff	130
Calls to Automated System	<u>1,332</u>
Total Calls	1,462
Visitor Transactions	270
E-Mail Advisories Sent	22,843

**BUSINESS ASSISTANCE**

SCAQMD notifies local businesses of proposed regulations so they can participate in the agency’s rule development process. SCAQMD also works with other agencies and governments to identify efficient, cost-effective ways to reduce air pollution and shares that information broadly. Staff provides personalized assistance to small businesses both over the telephone and via on-site consultation. The information is summarized below:

- Conducted one free on-site consultation
- Provided permit application assistance to 74 companies
- Issued 26 clearance letters

**Types of business assisted:**

Auto Body Shops	Auto Repair Shops	Metal Processing Facilities
Dry Cleaners	Printing Facilities	Furniture Manufacturers
Gas Stations	Aerospace Manufacturers	Construction & Architecture
Restaurants		

**OUTREACH TO COMMUNITY GROUPS AND FEDERAL, STATE, AND LOCAL GOVERNMENTS**

Field visits and/or communications were conducted with elected officials or staff from the following cities:

Alhambra	Canyon Lake	Fountain Valley
Arcadia	Cathedral City	Fullerton
Banning	Coachella	Garden Grove
Beaumont	Costa Mesa	Hemet
Blythe	Corona	Huntington Beach
Brea	Desert Hot Springs	Indio
Buena Park	Duarte	Indian Wells
Calimesa	Eastvale	Jurupa Valley

La Habra  
La Palma  
Lake Elsinore  
La Quinta  
Laguna Hills  
Laguna Niguel  
Laguna Woods  
Los Angeles  
Menifee  
Moreno Valley

Mission Viejo  
Murrieta  
Norco  
Newport Beach  
Palm Desert  
Palm Springs  
Perris  
Placencia  
Rancho Mirage  
Redlands

Riverside  
San Jacinto  
Santa Ana  
Temecula  
Tustin  
Yorba Linda  
Wildomar

Visits and/or communications were conducted with elected officials or staff from the following State and Federal Offices:

- U.S. Senator Barbara Boxer
- U.S. Senator Dianne Feinstein
- U.S. Senator James Inhofe
- U.S. Congressman Pete Aguilar
- U.S. Congressman Ken Calvert
- U.S. Congressman Tony Cardenas
- U.S. Congresswoman Judy Chu
- U.S. Congressman Paul Cook
- U.S. Congresswoman Janice Hahn
- U.S. Congressman Steve Knight
- U.S. Congressman Ted Lieu
- U.S. Congressman Raul Ruiz
- U.S. Congressman Mark Takano
- U.S. Congresswoman Norma Torres
- U.S. Congresswoman Lucille Roybal-Allard
- U.S. Congressman Alan Lowenthal
- U.S. Congresswoman Grace Napolitano
- U.S. Congresswoman Mimi Walters
- State Senator Benjamin Allen
- State Senator Joel Anderson
- State Senator Isadore Hall
- State Senator Ed Hernandez
- State Senator Bob Huff
- State Senator Ricardo Lara
- State Senator Carol Liu
- State Senator Tony Mendoza
- State Senator Janet Nguygen
- State Senator Richard Roth
- Assembly Member Travis Allen

- Assembly Member Autumn Burke
- Assembly Member Ed Chau
- Assembly Member Tom Daly
- Assembly Member David Hadley
- Assembly Member Ed Hernandez
- Assembly Member Roger Hernandez
- Assembly Member Chris Holden
- Assembly Member Yong Kim
- Assembly Member Chad Mayes
- Assembly Member Jose Medina
- Assembly Member Melissa Melendez
- Assembly Member Anthony Rendon
- Assembly Member Reggie Jones-Sawyer
- Assembly Member Don Wagner
- Assembly Member Marie Waldron
- Assembly Member Kim Young

Staff represented SCAQMD and/or provided a presentation to the following governments and business organizations:

Alhambra Chamber of Commerce  
 Arcadia Chamber of Commerce  
 Arcadia Police Department  
 Anaheim Chamber of Commerce  
 Association of California Cities, Orange County  
 Beaumont Chamber of Commerce  
 California Air Resources Board  
 California State University, San Bernardino  
 Greater Riverside Chambers of Commerce  
 Hemet/San Jacinto Chamber of Commerce  
 Orange County Council of Governments  
 Orange County Business Council  
 Orange County City Managers Association  
 Orange County Transportation Authority  
 Pasadena Chamber of Commerce  
 Redlands Chamber of Commerce  
 Riverside Transit Agency  
 Riverside County Department of Public Health  
 Riverside County Transportation Commission  
 San Gabriel Valley Council of Governments  
 San Gabriel Valley Economic Partnership  
 San Bernardino Associated Governments

South Bay Council of Governments  
Southern California Association of Governments  
Southwest California Legislative Council  
-Temecula Valley Chamber of Commerce  
-Murrieta Chamber of Commerce  
-Wildomar Chamber of Commerce  
-Menifee Valley Chamber of Commerce  
-Lake Elsinore Valley Chamber of Commerce  
-Perris Valley Chamber of Commerce  
Western Riverside County Council of Governments (WRCOG)  
-WRCOG Clean Cities Coalition  
Western Riverside County Transportation NOW (RTA)  
-Greater Riverside Chapter, Riverside  
-Hemet/San Jacinto, Hemet  
-Moreno Valley/Perris Chapter, Moreno Valley  
-Northwest Chapter, Norco  
-San Geronimo Pass Chapter, Beaumont  
-Southwest Chapter, Murrieta  
Yucaipa Chamber of Commerce

Staff represented SCAQMD and/or provided a presentation to the following community groups and organizations:

American Lung Association in California, Inland Counties  
Asian Youth Center, San Gabriel  
Beaumont School District  
Carson Senior Center  
Carson Senior Center YMCA  
Church of God in Christ, Los Angeles  
Corona Public Library  
Corona Senior Center  
Compton Unified School District  
Dales Senior Center, Riverside  
Dollarhide Neighborhood Center, Compton  
Downey High School  
Environmental Priorities Network, Manhattan Beach  
First African Methodist Episcopal Church, Los Angeles  
Fresh Start Charter School, Los Angeles  
Gardena Senior Center  
Inglewood Church  
Inglewood Senior Center  
Inland Empire Asthma Coalition  
Jim Gilliam Senior Center, Los Angeles  
Hawthorne Senior Center



Healthy San Bernardino Coalition  
Lawndale Senior Center  
Loma Linda University  
Long Beach Alliance for Children with Asthma Coalition  
Moreno Valley Unified School District  
Norco Senior Center  
Riverside County Health Coalition  
Second African Methodist Episcopal Church, Los Angeles  
Soboba Band of Luiseño Indians, San Jacinto  
University of California, Riverside  
Watts Senior Center, Los Angeles  
Westchester Senior Center, Los Angeles  
Western Center Academy Charter School, Hemet  
Western Municipal Water District  
Yvonne Burke Senior Center, Los Angeles

[↑ Back to Agenda](#)

BOARD MEETING DATE: March 6, 2015

AGENDA NO. 11

REPORT: Hearing Board Report

SYNOPSIS: This reports the actions taken by the Hearing Board during the period of January 1 through January 31, 2015.

COMMITTEE: No Committee Review

RECOMMENDED ACTION:

Receive and file this report.

Edward Camarena  
Chairman of Hearing Board

SM

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Two summaries are attached: **Rules From Which Variances and Orders for Abatement Were Requested in 2015** and **January 2015 Hearing Board Cases**.

The total number of appeals filed during the period January 1 to January 31, 2015 is 0.



























## Report of January 2015 Hearing Board Cases

Case Name and Case No.	Rules	Reason for Petition	District Position/ Hearing Board Action	Type and Length of Variance or Order	Excess Emissions
1. Coyote Canyon Energy LLC Case No. 5673-3 (T. Barrera)	203(b) 1150.1d)(1)(C)(i)	Turbine out of service for repair, cannot operate boiler without turbine, and cannot conduct annual source test on boiler while it is out of service.	Not Opposed/Granted	SV granted commencing 1/29/15 and continuing through 4/30/15.	None
2. ExxonMobil Oil Corporation Case No. 1183-489 (K. Manwaring)	202(a) 203(b) 221(b) 221(d) 1118(f)(1)(C) 2004(f)(1) 3002(c)(1)	Add revised dust mitigation plan to O/A.	Not Opposed/Granted	Ex Parte EV granted for a 3-day period in a window of time between 1/9/15 and 2/11/15.	NOx: 120 lbs/day SOx: 372 lbs/day PM: 39 lbs/day CO: 650 lbs/day ROG: 111 lbs/day
3. Farmer Bros Co. Case No. 6014-1 (R. Fernandez)	1147	APC serving coffee roaster violating Rule 1147.	Opposed/Denied	RV denied.	N/A
4. Hoag Memorial Hospital Presbyterian Case No. 6005-1 (K. Manwaring)	203(b) 1110.2(d)(1)(B)(ii) 3002(c)(1)	Three cogeneration engines periodically out of compliance with NOx and CO limits.	Not Opposed/Granted	RV granted commencing 1/8/15 and continuing through 5/6/15 the FCD.	NOx: TBD by 1/23/15 CO: TBD by 1/23/15
5. SCAQMD vs. Exide Technologies, Inc. Case No. 3151-29 (N. Feldman & T. Barrera)	203(b) 1407(d)(5) 2004(f)(1) 3002(c)(1)	Add different control technology to O/A.	Stipulated/Issued	Mod. O/A issued commencing 1/13/15; the Hearing Board shall retain jurisdiction over this matter until 12/31/15.	N/A
6. SCAQMD vs. Exide Technologies, Inc. Case No. 3151-32 (N. Feldman & T. Barrera)	1420(d)(1)	Compressor in central VRS could not be repaired within 24-hour breakdown grace period.	Stipulated/Issued	Mod. O/A issued commencing 1/13/15; the Hearing Board shall retain jurisdiction over this matter until 12/31/15.	N/A
7. SCAQMD vs. Rehabilitation Centre of Beverly Hills Case No. 5996-2 (N. Sanchez)	1146.2(c)(1) 1146.2(c)(4) 1146.2(c)(5)	Respondent operating three boilers exceeding NOx limits.	Stipulated/Issued	O/A issued commencing 1/14/15; the Hearing Board shall retain jurisdiction over this matter until 11/1/15.	N/A

8. SCAQMD vs. Ridgeline Energy Services (USA) Inc., a wholly owned subsidiary of RDX Technologies  Corporation Case No. 5954-1 (K. Manwaring)	203(a) 219(s)(2) 402 H&S Code §41700	Revision/clarification of current O/A regarding Tank Plan and odor monitoring/mitigation plan.	Not Stipulated/Issued	Mod. O/A issued commencing 1/8/15; the Hearing Board shall retain jurisdiction over this matter until 1/8/16.	N/A
9. Signal Hill Petroleum, Inc. Case No. 2166-18 (Consent Calendar; No Appearance)	203(b) 2004(f)(1)	NH3 CEMS readings unreliable.	Not Opposed/Granted	SV granted commencing 1/8/15 and continuing through 2/15/15.	None

### Acronyms

AOC: Alternative Operating Conditions  
 APC: Air Pollution Control  
 BACT: Best Available Control Technology  
 CEMS: Continuous Emissions Monitoring System  
 CEQA: California Environmental Quality Act  
 CO: Carbon Monoxide  
 DPF: Diesel Particulate Filter  
 EV: Emergency Variance  
 FCCU: Fluid Catalytic Cracking Unit  
 FCD: Final Compliance Date  
 GDF: Gasoline Dispensing Facility  
 H2S: Hydrogen Sulfide  
 H&S: Health & Safety Code  
 ICE: Internal Combustion Engine  
 I/P: Increments of Progress  
 IV: Interim Variance  
 MFCD/EXT: Modification of a Final Compliance Date and Extension of a Variance  
 Mod. O/A: Modification of an Order for Abatement

NH3: Ammonia  
 NOV: Notice of Violation  
 NOx: Oxides of Nitrogen  
 N/A: Not Applicable  
 O/A: Order for Abatement  
 PM: Particulate Matter  
 PPM: Parts Per Million  
 RATA: Relative Accuracy Test Audit  
 ROG: Reactive Organic Gases  
 RTO: Regenerative Thermal Oxidizer  
 RV: Regular Variance  
 SCR: Selective Catalytic Reduction  
 SOx: Oxides of Sulfur  
 SV: Short Variance  
 TBD: To be determined  
 VOC: Volatile Organic Compound  
 VRS: Vapor Recovery System



BOARD MEETING DATE: March 6, 2015

AGENDA NO. 12

REPORT: Civil Filings and Civil Penalties Report

SYNOPSIS: This reports the monthly penalties from January 1 through January 31, 2015, and legal actions filed by the General Counsel's Office from January 1 through January 31, 2015. An Index of District Rules is attached with the penalty report.

COMMITTEE: Stationary Source, February 20, 2015, Reviewed

RECOMMENDED ACTION:  
Receive and file this report.

Kurt R. Wiese  
General Counsel

KRW:lc

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<u>Violations</u>	<u>Civil Actions Filed</u>
2	TRIYAR COMPANIES, INC. Los Angeles Superior Court Case No. SC123630; Filed: 1.7.15 (NAS) P57941, P57949 R. 203 – Permit to Operate R. 1146.1 – Emissions of Oxide of Nitrogen from Small Industrial, Institutional and Commercial Boilers, Steam Generators and Process Heaters
2	SAHAKANUSH M. HERNANDEZ dba AGD ENTERPRISES Los Angeles Superior Court Case No. BC570918; Filed: 1.30.15 (NAS) P58691, P58693, P60507 R. 203 – Permit to Operate R. 1146 - Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters
4 Violations	2 Cases

Attachments  
January 2015 Penalty Report  
Index of District Rules and Regulations

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
General Counsel's Office**

**January 2015 Settlement Penalty Report**

**Total Penalties**

<b>Civil Settlements:</b>	<b>\$620,625.00</b>
<b>MSPAP Settlements:</b>	<b>\$13,485.00</b>
<b>Hearing Board Settlements:</b>	<b>\$5,000.00</b>
<b>Total Cash Settlements:</b>	<b>\$639,110.00</b>
<b>Total SEP Value:</b>	<b>\$0.00</b>
<b>Fiscal Year through January 2015 Cash Total:</b>	<b>\$7,343,661.66</b>
<b>Fiscal Year through January 2015 SEP Value Only Total:</b>	<b>\$299,000.00</b>

FAC ID	COMPANY NAME	RULE NUMBER	RECLAIM ID	SETTLED DATE	ATTY INT	NOTICE NO.	TOTAL SETTLEMENT
<b>CIVIL SETTLEMENTS:</b>							
148236	AIR LIQUIDE LARGE INDUSTRIES U.S.	3002 2004 203	Y	1/20/2015	TRB	P57243	\$80,000.00
145836	AMERICAN APPAREL DYEING & FINISHING,	2004	Y	1/6/2015	NSF	P57645	\$3,000.00
158147	BASF CORPORATION CONSTRUCTION	1113(C)(1)		1/15/2015	WBW	P60311	\$2,625.00
119907	BERRY PETROLEUM COMPANY	2012 3003, 3004	Y	1/28/2015	BTG	P37234 P37232	\$2,500.00
800396	BP WEST COAST PROD/ARCO VINVALE TERMINAL	3002		1/7/2015	BTG	P56568	\$6,000.00
50134	CACIQUE CHEESE CO \$10,000 suspended penalty to be paid if facility is found to be operating equipment in violation of any District rule for which an NOV is received one year of the effective date of the settlement agreement (December 16, 2014 - December 16, 2015.)	1146 1146		1/6/2015	WBW	P57288 P57290	\$40,000.00

FAC ID	COMPANY NAME	RULE NUMBER	RECLAIM ID	SETTLED DATE	ATTY INT	NOTICE NO.	TOTAL SETTLEMENT
172792	EL SEGUNDO OIL, LLC	1176(E)(1)		1/15/2015	BTG	P55647	\$5,500.00
176720	GOLD COAST GROWERS, LLC	208		1/16/2015	WBW	P49606	\$10,000.00
11245	HOAG MEM HOSP PRESBYTERIAN	3002(C)(1) 3002(C)(1)		1/21/2015	KCM	P59502 P58588	\$33,000.00
143723	LOVIN OVEN, LLC	203 (B), 1131 1131, 1146.2 203(A), 1147, 1131 203		1/20/2015	KCM	P57655 P57663 P57681 P57663	\$425,000.00
109065	MINSON ENTERPRISES	1147		1/30/2015	NSF	P58698	\$10,000.00
159199	SIC/LEED 1015 SANTA ANA LLC	1470		1/14/2015	TRB	P60401	\$3,000.00
<b>TOTAL CIVIL SETTLEMENTS:</b>							<b>\$620,625.00</b>

FAC ID	COMPANY NAME	RULE NUMBER	RECLAIM ID	SETTLED DATE	ATTY INT	NOTICE NO.	TOTAL SETTLEMENT
<b>MSPAP SETTLEMENTS:</b>							
170522	ABC ARCO FA CHAI CORP	41960.2 461		1/30/2015		P59332	\$300.00
174177	CIRCLE K STORES INC #2709493	41960.2 461(C)(2)(B)		1/6/2015		P61496	\$550.00
150440	EZ GAS AND MARKET, INC.	203 (B) 41960.2 461(C)(1)(A)		1/22/2015		P59326	\$1,300.00
171207	FORE GOLF MANAGEMNENT LLC	461		1/30/2015		P58896	\$650.00
140489	GKS SERVICE STATIONS INC.	461		1/30/2015		P60066	\$145.00
140949	MASTER CLEANERS	1421		1/7/2015		P60127	\$500.00
167561	ON SITE KRUSHING CO.	203 (A)		1/13/2015		P61910	\$1,000.00

FAC ID	COMPANY NAME	RULE NUMBER	RECLAIM ID	SETTLED DATE	ATTY INT	NOTICE NO.	TOTAL SETTLEMENT
132189	SANTA FE SPRINGS CITY	1110.2 203 (B)		1/22/2015		P59632	\$1,760.00
2924	SANTA FE SPRINGS CITY	1110.2 203 (B)		1/22/2015		P59633	\$1,760.00
65740	SUPERIOR LITHOGRAPHICS	203 (B)		1/30/2015		P62370	\$1,000.00
171631	TESORO (USA)	41960.2 461(C)(2)(B)		1/30/2015		P62344	\$520.00
152417	TIME WARNER CABLE	203 (A) 201		1/22/2015		P62478	\$2,400.00
150501	TIME WARNER CABLE	203		1/22/2015		P61185	\$1,600.00
<b>TOTAL MSPAP SETTLEMENTS:</b>							<b>\$13,485.00</b>

<b>FAC ID</b>	<b>COMPANY NAME</b>	<b>RULE NUMBER</b>	<b>RECLAIM ID</b>	<b>SETTLED DATE</b>	<b>ATTY INT</b>	<b>NOTICE NO.</b>	<b>TOTAL SETTLEMENT</b>
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**HEARING BOARD SETTLEMENTS:**

35188	3M COMPANY Hearing Board Case No. 5970-2 Penalty for ongoing operation of the facility's equipment in noncompliance until 9.15.15.	203, 1147, 1303		1/20/2015	KCM	HRB2260	\$4,000.00
173952	THE REHABILITATION CENTER OF BEVERLY Hearing Board Case No. 5996-2 Beginning 11.17.14, RCBH shall pay \$1,000/month until they permanently cease use of all three boilers in noncompliance with District Rule.	1146.2		1/14/2015	NAS	HRB2259	\$1,000.00

**TOTAL HEARING BOARD SETTLEMENTS: \$5,000.00**

## **DISTRICT RULES AND REGULATIONS INDEX FOR JANUARY 2015 PENALTY REPORTS**

### **REGULATION II – PERMITS**

List and Criteria Identifying Information Required of Applicants Seeking A Permit to Construct from the South Coast Air Quality Management - District (*Amended 4/10/98*)

- Rule 201      Permit to Construct (*Amended 1/5/90*)
- Rule 203      Permit to Operate (*Amended 1/5/90*)

### **REGULATION IV - PROHIBITIONS**

- Rule 461      Gasoline Transfer and Dispensing (*Amended 6/15/01*)

### **REGULATION XI - SOURCE SPECIFIC STANDARDS**

- Rule 1110.2    Emissions from Gaseous- and Liquid-Fueled Internal Combustion Engines (*Amended 11/14/97*)
- Rule 1113      Architectural Coatings (*Amended 6/20/01*)
- Rule 1131      Food Product Manufacturing and Processing Operations (*Adopted 9/15/00*)
- Rule 1146      Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters (*Amended 11/17/00*)
- Rule 1146.2    Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers (*Adopted 1/9/98*)
- Rule 1147      NOx REDUCTIONS FROM MISCELLANEOUS SOURCES (9/08)
- Rule 1176      Sumps and Wastewater Separators (*Amended 9/13/96*)

### **REGULATION XIII - NEW SOURCE REVIEW**

- Rule 1303      Requirements (*Amended 4/20/01*)

### **REGULATION XIV - TOXICS**

- Rule 1421      Control of Perchloroethylene Emissions from Dry Cleaning Operations (*Amended 6/13/97*)
- Rule 1470      Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines



**REGULATION XX REGIONAL CLEAN AIR INCENTIVES MARKET (RECLAIM)**

Rule 2004 Requirements (*Amended 5/11/01*)

Rule 2012 Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NO<sub>x</sub>) Emissions  
(*Amended 5/11/01*)

**REGULATION XXX - TITLE V PERMITS**

Rule 3002 Requirements (*Amended 11/14/97*)

**CALIFORNIA HEALTH AND SAFETY CODE § 41700**

41960.2 Gasoline Vapor Recovery

BOARD MEETING DATE: March 6, 2015

AGENDA NO. 13

REPORT: Lead Agency Projects and Environmental Documents Received by the SCAQMD

SYNOPSIS: This report provides, for the Board's consideration, a listing of CEQA documents received by the SCAQMD between January 1, 2015 and January 31, 2015, and those projects for which the SCAQMD is acting as lead agency pursuant to CEQA.

COMMITTEE: Mobile Source, February 20, 2015, Reviewed

RECOMMENDED ACTION:  
Receive and file.

Barry R. Wallerstein, D.Env.  
Executive Officer

EC:PF:SN:MK:JB:AK

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**CEQA Document Receipt and Review Logs (Attachments A and B)** – Each month, the SCAQMD receives numerous CEQA documents from other public agencies on projects that could adversely affect air quality. A listing of all documents received and reviewed during the reporting period of January 1, 2015 and January 31, 2015 is included in Attachment A. A list of active projects from previous reporting periods for which SCAQMD staff is continuing to evaluate or has prepared comments is included as Attachment B.

The Intergovernmental Review function, which consists of reviewing and commenting on the adequacy of the air quality analysis in CEQA documents prepared by other lead agencies, is consistent with the Board's 1997 Environmental Justice Guiding Principles and Initiative #4. Consistent with the Environmental Justice Program Enhancements for FY 2002-03 approved by the Board in September 2002, each of the attachments notes those proposed projects where the SCAQMD has been contacted regarding potential air quality-related environmental justice concerns. The SCAQMD has established an internal central contact to receive information on projects with potential air quality-related environmental justice concerns. The public may contact the SCAQMD about

projects of concern by the following means: in writing via fax, email, or standard letters; through telephone communication; as part of oral comments at SCAQMD meetings or other meetings where SCAQMD staff is present; or submitting newspaper articles. The attachments also identify for each project the dates of the public comment period and the public hearing date, as reported at the time the CEQA document is received by the SCAQMD. Interested parties should rely on the lead agencies themselves for definitive information regarding public comment periods and hearings as these dates are occasionally modified by the lead agency.

At the January 6, 2006 Board meeting, the Board approved the Workplan for the Chairman's Clean Port Initiatives. One action item of the Chairman's Initiatives was to prepare a monthly report describing CEQA documents for projects related to goods movement and to make full use of the process to ensure the air quality impacts of such projects are thoroughly mitigated. In response to describing goods movement CEQA documents, Attachments A and B are organized to group projects of interest into the following categories: goods movement projects; schools; landfills and wastewater projects; airports; and general land use projects, etc. In response to the mitigation component, guidance information on mitigation measures were compiled into a series of tables relative to: off-road engines; on-road engines; harbor craft; ocean-going vessels; locomotives; fugitive dust; and greenhouse gases. These mitigation measure tables are on the CEQA webpages portion of the SCAQMD's website. Staff will continue compiling tables of mitigation measures for other emission sources including airport ground support equipment, etc.

As resources permit, staff focuses on reviewing and preparing comments for projects: where the SCAQMD is a responsible agency; that may have significant adverse regional air quality impacts (e.g., special event centers, landfills, goods movement, etc.); that may have localized or toxic air quality impacts (e.g., warehouse and distribution centers); where environmental justice concerns have been raised; and those projects for which a lead or responsible agency has specifically requested SCAQMD review. If the SCAQMD staff provided written comments to the lead agency as noted in the column "Comment Status", there is a link to the "SCAQMD Letter" under the Project Description. In addition, if the SCAQMD staff testified at a hearing for the proposed project, a notation is provided under the "Comment Status." However, if there is no notation, then SCAQMD staff did not provide testimony at a hearing for the proposed project.

During the period January 1, 2015 through January 31, 2015, the SCAQMD received 79 CEQA documents. Of the total of 100 documents listed in Attachments A and B:

- 34 comment letters were sent;
- 10 documents were reviewed, but no comments were made;
- 22 documents are currently under review;
- 0 documents did not require comments (e.g., public notices, plot plans, Final Environmental Impact Reports);
- 0 documents was not reviewed; and
- 34 documents were screened without additional review.

\* These statistics are from January 1, 2015 to January 31, 2015 and do not include the most recent “Comment Status” updates in Attachments A and B.

Copies of all comment letters sent to lead agencies can be found on the SCAQMD’s CEQA webpage at the following internet address:

<http://www.aqmd.gov/home/regulations/ceqa/commenting-agency/comment-letter-year-2014>.

**SCAQMD Lead Agency Projects (Attachment C)** – Pursuant to CEQA, the SCAQMD periodically acts as lead agency for stationary source permit projects. Under CEQA, the lead agency is responsible for determining the type of CEQA document to be prepared if the proposal is considered to be a “project” as defined by CEQA. For example, an Environmental Impact Report (EIR) is prepared when the SCAQMD, as lead agency, finds substantial evidence that the proposed project may have significant adverse effects on the environment. Similarly, a Negative Declaration (ND) or Mitigated Negative Declaration (MND) may be prepared if the SCAQMD determines that the proposed project will not generate significant adverse environmental impacts, or the impacts can be mitigated to less than significance. The ND and MND are written statements describing the reasons why proposed projects will not have a significant adverse effect on the environment and, therefore, do not require the preparation of an EIR.

Attachment C to this report summarizes the active projects for which the SCAQMD is lead agency and is currently preparing or has prepared environmental documentation. During January, the public review period for one Lead Agency CEQA document ended. As noted in Attachment C, the SCAQMD continued working on the CEQA documents for eight active projects during January.

### **Attachments**

- A. Incoming CEQA Documents Log
- B. Ongoing Active Projects for Which SCAQMD Has or Will Conduct a CEQA Review
- C. Active SCAQMD Lead Agency Projects

**ATTACHMENT A\* INCOMING CEQA  
DOCUMENTS LOG  
JANUARY 1, 2015 TO JANUARY 31, 2015**

<u>SCAQMD LOG-IN NUMBER</u> PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
<b><i>Goods Movement</i></b> <b>LAC150113-09</b> Wharf and Backlands Improvements at Berths 212-224 #	The proposed project consists of wharf and backlands improvements at Berths 212-224 operated by Yusen Terminal, Inc. (YTI). Reference LAC141007-04, LAC140506-01.  Comment Period: N/A Public Hearing: 1/22/2015	Notice of a Public Hearing	Port of Los Angeles	Document screened - No further review conducted
<b><i>Warehouse &amp; Distribution Centers</i></b> <b>RVC150113-01</b> GPA No. 1079, Change of Zone No. 7799, Parcel Map No. 36564, Plot Plan No. 25337 Amended No. 2 (Fast Tract Authorization No. 2008-24)	The proposed project consists of the construction of an industrial distribution facility consisting of two industrial buildings totaling 2,560,000 square feet, with 428 bay doors located on 246.5 gross acres.  <a href="http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2015/january/pcriversidepp25337.pdf">http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2015/january/pcriversidepp25337.pdf</a> Comment Period: 1/13/2015 - 1/29/2015 Public Hearing: N/A	Initial Project Consultation	County of Riverside	SCAQMD staff commented 1/15/2015
<b><i>Warehouse &amp; Distribution Centers</i></b> <b>SBC150120-02</b> Citrus Commerce Park	The proposed project consists of developing the Citrus Commerce Industrial Park (Near-Term Development Site), a warehouse (Long-Term Development Site), and a park site on a 77.56 acre site. The proposed project may include the ultimate development of four logistics warehouse buildings for a total of 2,171,449 square feet of high cube warehouse/distribution. The Near-Term Development Site applications also include a Design Review Application to construct three warehouse buildings (Building 1: 634,843 square feet, Building 2: 1,038,499 square feet, and Building 3: 209,892 square feet), and Tentative Parcel Map to merge approximately 77.57 acres into three parcels. Reference SBC140923-04  Comment Period: N/A Public Hearing: N/A	Final Environmental Impact Report	City of Fontana	Document screened - No further review conducted
<b><i>Warehouse &amp; Distribution Centers</i></b> <b>SBC150130-01</b> Meredith International Centre General Plan Amendment & Specific Plan Amendment	The proposed project consists of an amendment to the General Plan and Meredith International Centre Specific Plan. Approval would allow for the development of approximately 3 million square feet of industrial uses, 1.1 million square feet of commercial uses, and up to 800 residential units on approximately 257 acres.  Comment Period: 1/30/2015 - 3/15/2015 Public Hearing: N/A	Draft Environmental Impact Report	City of Ontario	Under review, may submit written comments

\*Sorted by Land Use Type (in order of land uses most commonly associated with air quality impacts), followed by County, then date received.

# - Project has potential environmental justice concerns due to the nature and/or location of the project.

**ATTACHMENT A  
INCOMING CEQA DOCUMENTS LOG  
JANUARY 1, 2015 TO JANUARY 31, 2015**

<u>SCAQMD LOG-IN NUMBER</u> PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
<i>Industrial and Commercial</i> <b>LAC150122-09</b> 4051 South Alameda Street	The proposed project consists of constructing a new industrial park consisting of four buildings. Building 1 consists of a single-story with a mezzanine that occupies approximately 115,973 total square feet; Building 2 consists of two stories that will occupy approximately 133,680 total square feet; Building 3 consists of a single-story with a mezzanine that occupies approximately 116,972 total square feet; and Building 4 consists of a single-story with a mezzanine that occupies approximately 114,397 total square feet. In total, the proposed project would occupy approximately 365,945 square feet of warehouse space, 85,181 square feet of office space, and 29,896 square feet of manufacturing space.  Comment Period: 1/22/2015 - 3/9/2015 Public Hearing: N/A	Draft Environmental Impact Report	City of Los Angeles	Under review, may submit written comments
<i>Industrial and Commercial</i> <b>LAC150129-02</b> ENV-2014-3259/ 11038, 11070, 11100 W. Peoria St.; Sun Valley; La Tuna Canyon	The proposed project consists of developing a vacant 434,812-square-foot parcel with a film and television studio providing eight soundstages, a production equipment warehouse, and ancillary studio uses. Two buildings totaling 218,660 square feet are proposed.  Comment Period: 1/29/2015 - 2/18/2015 Public Hearing: N/A	Notice of Availability of a Draft Mitigated Negative Declaration	City of Los Angeles	Document screened - No further review conducted
<i>Industrial and Commercial</i> <b>ORC150122-11</b> Ganahl Lumber Hardware Store and Lumber Yard Project	The proposed project consists of developing a 6.6-acre vacant lot to accommodate the relocation of the Costa Mesa Ganahl Lumber store. The development includes the construction of a 65,263-square-foot building material retail store with administrative offices; a proposed outdoor storage yard consisting of three sheds totaling 40,925 square feet; provision of a total of 286 parking spaces on the project site; solar photovoltaic panels would be installed on the roof of the retail building; and a freestanding monument signage.  Comment Period: 1/23/2015 - 2/22/2015 Public Hearing: N/A	Draft Mitigated Negative Declaration	City of Costa Mesa	Document reviewed - No comments sent
<i>Industrial and Commercial</i> <b>RVC150113-05</b> Tentative Parcel Map No. 36735 and Plot Plan No. 25677	The proposed project consists of a BMW Driving Facility on the existing Kohl Ranch Specific Plan. The project will be landscaped and will consist of a driver instruction school, an approximate one-mile driver training track for the purpose of teaching driving skills, a 49,087-square-foot skid pad, a two-story 8,550-square-foot visitor conference building, a 2,800-square-foot visitor conference building, a 2,800 square-foot maintenance building, two 4,400-square-foot structures, and 800 square-foot guard house and a 740-square-foot sales trailer.  Comment Period: 1/13/2014 - 1/22/2015 Public Hearing: N/A	Initial Project Consultation	County of Riverside	Document screened - No further review conducted

# - Project has potential environmental justice concerns due to the nature and/or location of the project.









**ATTACHMENT A  
INCOMING CEQA DOCUMENTS LOG  
JANUARY 1, 2015 TO JANUARY 31, 2015**

<u>SCAQMD LOG-IN NUMBER</u> PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
<b>Waste and Water-related</b> <b>SBC150113-08</b> Etiwanda Pipeline North Relining Project	The proposed project consists of removing the existing interior mortar lining and recoating the pipe with a new lining in a 4.8-mile segment.  Comment Period: 1/13/2015 - 2/13/2015 Public Hearing: N/A	Draft Environmental Impact Report	Metropolitan Water District	Document screened - No further review conducted
<b>Utilities</b> <b>LAC150115-03</b> ENV-2014-1372/ 7660 N. Balboa Blvd.; Reseda-West Van Nuys	The proposed project consists of the installation, operation and maintenance of a 65-foot high unmanned wireless telecommunications facility disguised as a palm tree in the rear parking area at the southeast corner of a public storage facility.  <a href="http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2015/january/mndcell20141372.pdf">http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2015/january/mndcell20141372.pdf</a> Comment Period: 1/15/2015 - 2/4/2015 Public Hearing: N/A	Notice of Availability of a Draft Mitigated Negative Declaration	City of Los Angeles	SCAQMD staff commented 1/20/2015
<b>Utilities</b> <b>LAC150115-04</b> ENV-2014-1377/ 10235 Woodman Ave. and 14801 W. Tuba St.; Mission Hills-Panorama City-North Hills	The proposed project consists of the installation, operation and maintenance of a 60-foot high unmanned wireless telecommunications facility disguised as a eucalyptus tree to be located along the Woodman Avenue frontage in the existing landscape buffer in front of a parking lot associated with the north abutting parcel/union hall.  <a href="http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2015/january/mndcell20141377.pdf">http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2015/january/mndcell20141377.pdf</a> Comment Period: 1/15/2015 - 2/4/2015 Public Hearing: N/A	Notice of Availability of a Draft Mitigated Negative Declaration	City of Los Angeles	SCAQMD staff commented 1/20/2015
<b>Utilities</b> <b>LAC150115-05</b> ENV-2014-1479/ 10401 Winnetka Ave. and 20121 Devonshire St.; Chatsworth-Porter Ranch	The proposed project consists of the installation, operation and maintenance of a 60-foot high unmanned wireless telecommunications facility disguised as a pine tree. The project will contain 12 eight-foot long panel antennas in three arrays, 24 remote radio units located behind the panel antennas, one two-foot diameter microwave antenna, one GPS antenna, and one diesel generator.  <a href="http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2015/january/mndcell20141479.pdf">http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2015/january/mndcell20141479.pdf</a> Comment Period: 1/15/2015 - 2/4/2015 Public Hearing: N/A	Notice of Availability of a Draft Mitigated Negative Declaration	City of Los Angeles	SCAQMD staff commented 1/20/2015
<b>Utilities</b> <b>ODP150114-20</b> Analysis of Oil and Gas Well Stimulation Treatments in California	The proposed project consists of analyzing the impacts of well stimulation treatments, including hydraulic fracturing, performed in a manner consistent with the proposed permanent regulations that would amend California Code of Regulations Title 14, Division 2, Chapter 4, Subchapter 2.  Comment Period: 1/14/2015 - 3/16/2015 Public Hearing: N/A	Draft Environmental Impact Report	Department of Conservation	Under review, may submit written comments

# - Project has potential environmental justice concerns due to the nature and/or location of the project.



























**ATTACHMENT B\***  
**ONGOING ACTIVE PROJECTS FOR WHICH SCAQMD HAS**  
**OR IS CONTINUING TO CONDUCT A CEQA REVIEW**

<u>SCAQMD LOG-IN NUMBER</u> PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
<i>Warehouse &amp; Distribution Centers</i> <b>LAC141223-15</b> Brickyard Commerce Center #	The proposed project consists of a 1.43-million-square-foot warehouse/distribution building on the main parcel and a 70,000 square-foot light industrial building off the southern flag lot.  <a href="http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2015/january/dmndbrickyard.pdf">http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2015/january/dmndbrickyard.pdf</a> Comment Period: 12/22/2014 - 1/21/2015 Public Hearing: N/A	Draft Negative Declaration	City of Compton	SCAQMD staff commented 1/20/2015
<i>Warehouse &amp; Distribution Centers</i> <b>SBC141128-09</b> Sierra Pacific Center II Project #	The proposed project consists of the construction and operation of approximately 763,350 net square feet of high-cube logistics warehouse use with associated office and mezzanine spaces.  <a href="http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2015/january/deirsierra.pdf">http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2015/january/deirsierra.pdf</a> Comment Period: 11/28/2014 - 1/5/2015 Public Hearing: 12/16/2014	Draft Environmental Impact Report	City of Fontana	SCAQMD staff commented 1/2/2015
<i>Warehouse &amp; Distribution Centers</i> <b>SBC141211-08</b> Waterman Logistics Center #	The proposed project consists of the development of a 426,858 square-foot logistics warehouse building and associated improvements on 19.65 acres.  <a href="http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2015/january/mndwaterman.pdf">http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2015/january/mndwaterman.pdf</a> Comment Period: 12/10/2014 - 1/8/2015 Public Hearing: N/A	Draft Mitigated Negative Declaration	City of San Bernardino	SCAQMD staff commented 1/8/2015
<i>Warehouse &amp; Distribution Centers</i> <b>SBC141223-01</b> West Valley Logistics Center Specific Plan #	The proposed project consists of the West Valley Logistics Center Specific Plan which would serve as the guiding document to develop an approximately 291-acre site with industrial/ warehousing, public facility and open space land uses within the southern eastern portion of the City of Fontana. The project proposes 3.5 million square feet of industrial and warehouse logistics development.  <a href="http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2015/february/deirwestvalley.pdf">http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2015/february/deirwestvalley.pdf</a> Comment Period: 12/18/2014 - 2/16/2015 Public Hearing: N/A	Notice of Availability of a Draft Environmental Impact Report	City of Fontana	SCAQMD staff commented 2/12/2015
<i>Industrial and Commercial</i> <b>LAC141209-10</b> MGA Mixed-Use Campus Project	The proposed project consists of an integrated light industrial corporate office and residential mixed-use campus development project. The project will consist of a mix of uses totaling approximately 1.22 million square feet, including: 1) adaptive re-use and rehabilitation of the former LA Times printing facility for MGA light industrial uses and its corporate headquarters, as well as ancillary creative office space; 2) 700 rental housing units in four main residential buildings; 3) shared recreational campus amenities located throughout the site; and 4) approximately 14,000 square feet of campus and neighborhood serving retail and restaurant uses.  <a href="http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2015/january/deirmga.pdf">http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2015/january/deirmga.pdf</a> Comment Period: 12/4/2014 - 1/20/2015 Public Hearing: N/A	Draft Environmental Impact Report	City of Los Angeles	SCAQMD staff commented 1/20/2015

\*Sorted by Comment Status, followed by Land Use, then County, then date received.

# - Project has potential environmental justice concerns due to the nature and/or location of the project.











**ATTACHMENT C**  
**ACTIVE SCAQMD LEAD AGENCY PROJECTS**  
**THROUGH January 31, 2015**

PROJECT DESCRIPTION	PROPONENT	TYPE OF DOCUMENT	STATUS	CONSULTANT
<p>The Phillips 66 (formerly ConocoPhillips) Los Angeles Refinery Ultra Low Sulfur Diesel project was originally proposed to comply with federal, state and SCAQMD requirements to limit the sulfur content of diesel fuels. Litigation against the CEQA document was filed. Ultimately, the California Supreme Court concluded that the SCAQMD had used an inappropriate baseline and directed the SCAQMD to prepare an EIR, even though the project has been built and has been in operation since 2006. The purpose of this CEQA document is to comply with the Supreme Court's direction to prepare an EIR.</p>	<p>Phillips 66 (formerly ConocoPhillips), Los Angeles Refinery</p>	<p>Environmental Impact Report (EIR)</p>	<p>The Notice of Preparation/ Initial Study (NOP/IS) was circulated for a 30-day public comment period on March 26, 2012 to April 26, 2012. The consultant submitted the administrative Draft EIR to SCAQMD in late July 2013. The Draft EIR was circulated for a 45-day public review and comment period from September 30, 2014 to November 13, 2014. Two comment letters were received and responses to comments are being prepared.</p>	<p>Environmental Audit, Inc.</p>
<p>Tesoro Refinery proposes to integrate the Tesoro Wilmington Operations with the Tesoro Carson Operations (former BP Refinery). The proposed project also includes modifications of storage tanks at both facilities, new interconnecting pipelines, and new electrical connections. In addition, Carson's Liquid Gas Rail Unloading facilities will be modified. The proposed project will be designed to comply with the federally mandated Tier 3 gasoline specifications and with State and local regulations mandating emission reductions.</p>	<p>Tesoro Refining and Marketing Company Los Angeles Refinery</p>	<p>Environmental Impact Report (EIR)</p>	<p>A previous Draft Negative Declaration was withdrawn in order for the storage tank project to be analyzed in a new CEQA document that also addresses the Tesoro-BP Refinery Integration Project. A NOP/IS was prepared for the integration project and released for a 30-day public review and comment period from September 10, 2014 to October 10, 2014. 86 comment letters were received, and responses to comments are being prepared. The consultant is preparing a Draft EIR.</p>	<p>Environmental Audit, Inc.</p>
<p>Operators of the KinderMorgan Lomita Terminal are proposing to deliver crude oil by expanding their rail facility.</p>	<p>KinderMorgan Lomita Terminal</p>	<p>To Be Determined</p>	<p>Permit applications were not received so this project will be removed from this table until activity resumes.</p>	<p>SABS Consulting and TRC</p>
<p>Operators of the Petro Diamond Marine Terminal are proposing to increase the number of ship calls delivering ethanol.</p>	<p>Petro Diamond</p>	<p>To Be Determined</p>	<p>No current active action is taking place with this project so it will be removed from this table until activity resumes.</p>	<p>SABS Consulting</p>

A shaded row indicates a new project.

**ATTACHMENT C**  
**ACTIVE SCAQMD LEAD AGENCY PROJECTS**  
**THROUGH January 31, 2015**

PROJECT DESCRIPTION	PROPONENT	TYPE OF DOCUMENT	STATUS	CONSULTANT
Quemetco is proposing an increase in daily furnace feed rate.	Quemetco	To Be Determined	An Initial Study has been prepared by the consultant and is under review by SCAQMD staff.	Trinity Consultants
Chevron is proposing modifications to its Product Reliability and Optimization (PRO) Project and has applied for a change of permit conditions to reduce NOx emissions and fired duty operating conditions of the Tail Gas Unit.	Chevron	Addendum	An addendum to the 2008 Final EIR has been prepared by the consultant. Staff has reviewed the Addendum and provided edits to the consultant. Chevron is currently conducting a BACT review for equipment.	Environmental Audit, Inc.
Signal Hill Petroleum is proposing to upgrade the existing natural gas processing plant and enhance their vapor recovery system. No new combustion equipment will be installed.	Signal Hill Petroleum Gas Plant	Subsequent Mitigated Negative Declaration (SMND)	The SMND was released for a 35-day public comment and review period from November 26, 2014 to December 30, 2014. No comment letters were received.	RBF Consulting
Breitburn Operating LP is proposing to upgrade their fluid handling systems to facilitate an increase in the amount of produced water that can be treated at the site in Sante Fe Springs.	Breitburn Operating LP	Environmental Impact Report (EIR)	The NOP/IS was released for a 30-day public review and comment period from December 4, 2014 to January 2, 2015. Two comment letters were received and responses are being prepared. A Draft EIR is also being prepared.	Environ

A shaded row indicates a new project.

BOARD MEETING DATE: March 6, 2015

AGENDA NO. 14

REPORT: Rule and Control Measure Forecast

SYNOPSIS: This report highlights SCAQMD rulemaking activities and public workshops potentially scheduled for the year 2015.

COMMITTEE: No Committee Review

RECOMMENDED ACTION:  
Receive and file.

Barry R. Wallerstein, D.Env.  
Executive Officer

EC:PF:cg

416	Odors from Kitchen Grease Processing
Rule 416 is moved from May to July to allow for additional staff analysis and stakeholder input.	
1148.1	Oil and Gas Production Wells
Rule 1148.1 is moved from April to June to allow staff additional time to continue working with stakeholders on efforts to address outstanding issues, including analyzing any potential environmental impacts.	
1156	Further Reductions of Particulate Emissions From Decontamination of Soil
Rule 1156 is moved from May to June to allow for additional staff analysis and stakeholder input.	
2202	On-Road Motor Vehicle Mitigation Options
Rule 2202 Employee Commute Reduction Program Guidelines proposed update is moved from April to May to allow for additional staff analysis and stakeholder input.	
4001	Backstop to Ensure AQMP Emission Reduction Targets Are Met at Commercial Marine Ports (IND-01)
Proposed Rule 4001 is moved from April to June to allow staff to work with the Ports of Los Angeles and Long Beach on the potential development of a new Clean Air Action Plan, which may impact staff's current proposal and the process moving forward.	

## 2015 MASTER CALENDAR

Below is a list of all rulemaking activity scheduled for the year 2015. The last four columns refer to the type of rule adoption or amendment. A more detailed description of the proposed rule adoption or amendment is located in the Attachments (A through D) under the type of rule adoption or amendment (i.e. AQMP, Toxics, Other and Climate Change).

*\*An asterisk indicates that the rulemaking is a potentially significant hearing.*

*+This proposed rule will reduce criteria air contaminants and assist toward attainment of ambient air quality standards.*

*<sup>1</sup>Subject to Board approval*

*California Environmental Quality Act shall be referred to as "CEQA."*

*Socioeconomic Analysis shall be referred to as "Socio."*

### 2015

April		AQMP	Toxics	Other	Climate Change
Reg. IX	Standards of Performance for New Stationary Sources			√	
Reg. X	National Emission Standards for Hazardous Air Pollutants			√	
May					
219	Equipment Not Requiring a Written Permit Pursuant to Regulation II			√	
Reg. III	Fees			√	
415	Odors from Animal Rendering			√	
1166	Volatile Organic Compound Emissions from Decontamination of Soil			√	
1188	VOC Reductions from Vacuum Trucks (FUG-01)	√			
1401	New Source Review of Toxic Air Contaminants		√		
Reg. XX	Regional Clean Air Incentives Market (RECLAIM) (CMB-01)	√			
2202 <sup>1</sup>	On-Road Motor Vehicle Mitigation Options			√	

**2015 MASTER CALENDAR (continued)**

**2015**

<b>June</b>		<b>AQMP</b>	<b>Toxics</b>	<b>Other</b>	<b>Climate Change</b>
1148.1 <sup>1</sup>	Oil and Gas Production Wells			√	
1148.2	Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers		√	√	
1156 <sup>1</sup>	Further Reductions of Particulate Emissions from Cement Manufacturing Facilities		√		
1420	Emissions Standard for Lead		√		
1420.2	Emissions Standard for Lead from Metal Melting Operations		√		
2301	Control of Emissions from New or Redevelopment Projects (EGM-01)	√			
4001 <sup>1</sup>	Backstop to Ensure AQMP Emission Reduction Targets Are Met at Commercial Marine Ports (IND-01)	√			
<b>July</b>					
416 <sup>1</sup>	Odors from Kitchen Grease Processing			√	
1123	Refinery Process Turnarounds (MCS-03)	√			
1171	Solvent Cleaning Operations (CTS-02)	√			
1430.1	Control of Toxic Air Contaminants from Grinding Operations at Forging Facilities		√		
<b>September</b>					
1106	Marine Coating Operations			√	
1106.1	Pleasure Craft Coating Operations			√	
1304.2	Greenfield or Existing Electrical Generating Facility Fee for Use of Offsets for Load Serving Entities			√	
1304.3	Greenfield or Existing Electrical Generating Facility Fee for Use of Offsets for Municipalities			√	



**2015 MASTER CALENDAR (continued)**

**2015**

<b>October</b>		<b>AQMP</b>	<b>Toxics</b>	<b>Other</b>	<b>Climate Change</b>
1110.2	Emissions from Gaseous and Liquid-Fueled Engines			√	
1161	VOC Reductions from Mold Release Agents (CTS-03)	√			
<b>November</b>					
1113	Architectural Coatings (CTS-01)	√			
1177	Liquefied Petroleum Gas Transfer and Dispensing (FUG-02)	√			
1402	Control of Toxic Air Contaminants from Existing Sources		√		
1450	Control of Methylene Chloride Emissions		√		
<b>December</b>					
1136	Wood Products Coatings (CTS-02)			√	
1430	Control of Toxic Air Contaminants from Metal Forging, Shredding, Grinding and Other Metal Processing Operations		√		

**2015 TO-BE DETERMINED**

<b>TBD</b>		<b>AQMP</b>	<b>Toxics</b>	<b>Other</b>	<b>Climate Change</b>
219	Equipment Not Requiring a Written Permit Pursuant to Regulation II			√	
222	Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation I			√	
224	Incentives for Super-Compliant Technologies			√	

**2015 MASTER CALENDAR (continued)**

**2015 TO-BE DETERMINED**

<b>TBD</b>	<b>(continued)</b>	<b>AQMP</b>	<b>Toxics</b>	<b>Other</b>	<b>Climate Change</b>
1107	Coating of Metal Parts and Products (CTS-02)			√	
1118	Control of Emissions from Refinery Flares			√	√
1147	NOx Reductions from Miscellaneous Sources			√	
1148.2	Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers		√	√	
1168	Adhesive and Sealant Applications (CTS-02)	√			
1190 Series	Fleet Vehicle Requirements			√	
Reg. XIII	New Source Review			√	
1403	Asbestos Emissions from Demolition/Renovation Activities		√		
1411	Recovery of Recycling of Refrigerants from Motor Vehicle Air Conditioners		√		
1902	Transportation Conformity – Preamble			√	
2511	Credit Generation Program for Locomotive Head End Power Unit Engines			√	
2512	Credit Generation Program for Ocean-Going Vessels at Berth			√	
Reg. XXVII	Climate Change				√

**2015 MASTER CALENDAR (continued)**

**2015 TO-BE DETERMINED**

<b>TBD</b>	<b>(continued)</b>	<b>AQMP</b>	<b>Toxics</b>	<b>Other</b>	<b>Climate Change</b>
Reg. IV, IX, X, XI, XIV, XX, XXX and XXXV Rules	Various rule amendments may be needed to meet the requirements of state and federal laws, implement OEHHA revised risk assessment guidance, address variance issues/ technology-forcing limits, to abate a substantial endangerment to public health or welfare, or to seek additional reductions to meet the SIP short-term measure commitment. The associated rule development or amendments include, but are not limited to, SCAQMD existing rules listed in Table 1 of the December 5, 2014 Rule and Control Measure Forecast and new or amended rules to implement the 2012 AQMP measures in Table 2 of the December 5, 2014 Rule and Control Measure Forecast. The CCP has been updated to include new measures to address toxic emissions in the basin. The CCP includes a variety of measures that will reduce exposure to air toxics from stationary, mobile, and area sources (Table 3 of the December 5, 2014 Rule and Control Measure Forecast). Rule amendments may include updates to provide consistency with CARB Statewide Air Toxic Control Measures.	√	√	√	√
---	Mobile Source Measures	√	√		
---	SIP Implementation	√			

# ATTACHMENT A

## AQMP Rule Activity Schedule

This attachment lists those control measures that are being developed into rules or rule amendments for Governing Board consideration that are designed to implement the amendments to the 2012 Air Quality Management Plan.

**.2015**

<b>May</b>	
1188	<p><b>VOC Reductions from Vacuum Trucks (FUG-01)</b>  <i>[Projected Emission Reduction: TBD]</i>                      The proposed rule will establish VOC emission standards and other requirements associated with the operation of vacuum trucks not covered by Rule 1149 – Storage Tank and Pipeline Cleaning and Degassing.  <i>Naveen Berry 909.396.2363 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
Reg. XX	<p><b>Regional Clean Air Incentives Market (RECLAIM) (CMB-01)</b>  <i>[Projected Emission Reduction: 3-5 TPD]</i>                      Proposed amendments to Regulation XX will seek to implement a minimum contingency measure CMB-01 of the 2012 AQMP and possibly Phase II of the control measure if the technology assessment can be completed within the allotted time for this rulemaking.  <i>Joe Cassmassi 909.396.3155 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
<b>June</b>	
2301	<p><b>Control of Emissions from New or Redevelopment Projects (EGM-01)</b>  <i>[Projected Emission Reduction: Committed to reduce 0.5 tons per day of VOC, 0.8 tons per day of NOx, and 0.5 tons per day of PM2.5 in 2023.]</i>                      The proposed rule will implement AQMP Control Measure EGM-01 – Emission Reductions from New or Redevelopment Projects. Proposed Rule 2301 will consider the co-benefits of VOC, NOx, and PM 2.5 emission reductions from the 2012 Regional Transportation Plan/Sustainable Communities Strategy and San Joaquin Valley Air Pollution Control District’s Rule 9510 – Indirect Source Review to meet the “all feasible measure” requirement.  <i>Carol Gomez 909.396.3264 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
4001 <sup>1</sup>	<p><b>Backstop to Ensure AQMP Emission Reduction Targets Are Met at Commercial Marine Ports (IND-01)</b>  <i>[Projected Emission Reduction: TBD]</i>                      If triggered, the proposed rule will address cost-effective NOx, SOx, and PM2.5 emission reduction strategies from port-related sources to ensure emission reductions claimed or emission targets assumed in the 2012 AQMP for the 24-hour PM2.5 standard are maintained.  <i>Randall Pasek 909.396.2251 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>

# ATTACHMENT A

## AQMP Rule Activity Schedule (continued)

**2015**

<b>July</b>	
1123	<p><b>Refinery Process Turnarounds (MCS-03)</b>  <i>[Projected Emission Reduction: N/A]</i>                      Proposed amendments, if needed, will implement Control Measure MSC-03 of the 2007 AQMP by establishing procedures that better quantify emission impacts from start-up, shutdown or turnaround activities.  <i>Naveen Berry 909.396.2363 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
1171	<p><b>Solvent Cleaning Operations (CTS-02)</b>  <i>[Projected Emission Reduction: Some VOC]</i>                      The proposed amendments will review existing exemptions and include clarifications that may arise due to compliance verification activities or manufacturer and public input, including the sales prohibition clause.  <i>Naveen Berry 909.396.2363 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
<b>October</b>	
1161	<p><b>VOC Reductions from Mold Release Agents (CTS-03)</b>  <i>[Projected Emission Reduction: TBD]</i>                      The proposed rule will establish requirements for mold release products used in composite, fiberglass, metal and plastic manufacturing, and concrete stamping operations.  <i>Naveen Berry 909.396.2363 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
<b>November</b>	
1113	<p><b>Architectural Coatings (CTS-01)</b>  <i>[Projected Emission Reduction: N/A]</i>                      Potential amendments may include a backstop provision to address additional potential VOC emission reductions from the small container exemption, high volume categories, and increased fees in Rule 314 – Fees for Architectural Coatings. Additional clarifications will also be considered to address ongoing compliance issues.  <i>Naveen Berry 909.396.2363 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
1177	<p><b>Liquefied Petroleum Gas Transfer and Dispensing (FUG-02)</b>  <i>[Projected Emission Reduction: N/A]</i>                      Potential amendments may be proposed to include additional sources of emissions from the dispensing and transfer of LPG.  <i>Naveen Berry 909.396.2363 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>

# ATTACHMENT A

## AQMP Rule Activity Schedule (continued)

**2015**

<b>To-Be Determined</b>	
1168	<p><b>Adhesive and Sealant Applications (CTS-02)</b>  <i>[Projected Emission Reduction: N/A]</i>                      Amendments to Rule 1168 will partially implement CTS-02 and reflect improvements in adhesive and sealants technology, as well as remove outdated provisions and include minor clarifications.  <i>Naveen Berry 909.396.236 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
Reg. IV, IX, X, XI, XIV, XIV, XX, XXX AND XXXV Rules	<p>Various rule amendments may be needed to meet the requirements of state and federal laws, implement OEHHA revised risk assessment guidance, address variance issues/ technology-forcing limits, to abate a substantial endangerment to public health or welfare, or to seek additional reductions to meet the SIP short-term measure commitments and/or long-term emission reduction commitments. The associated rule development or amendments include, but are not limited to, SCAQMD existing rules listed in Table 1 of the December 5, 2014 Rule and Control Measure Forecast and new or amended rules to implement the 2012 AQMP measures in Table 2 of the December 5, 2014 Rule and Control Measure Forecast.</p>
---	<p><b>Mobile Source Measures</b>  <i>[Projected Emission Reduction: TBD]</i>                      The District may adopt measures to limit emissions from mobile sources, both on-road and off-road (nonroad) sources, consistent with the Board's direction to counsel at the October 2014 meeting to explore the District's regulatory authority over mobile sources. These measures may include but are not limited to, transportation control measures, operational limits, fleet rules, credit generation rules, and indirect source rules, such as an indirect source rule for railyards and/or other sources which attract mobile sources.  <i>Henry Hogo 909.396.3184 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
---	<p><b>SIP Implementation</b>  <i>[Projected Emission Reduction: TBD]</i>                      The District may adopt additional measures to carry out the State Implementation Plan for PM2.5 or ozone, or other pollutants if required, as deemed necessary to meet commitments and federal requirements.  <i>Philip Fine 909.396.2239 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>

# ATTACHMENT B

## Toxics Rule Activity Schedule

This attachment lists those rules or rule amendments for Governing Board consideration that are designed to implement the Air Toxics Control Plan.

**2015**

<b>May</b>	
1401	<p><b>New Source Review of Toxic Air Contaminants</b>  <i>[Projected Emission Reduction: TBD]</i>                      The Office of Environmental Health Hazard Assessment (OEHHA) is updating its Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. The proposed amendment will address revisions to OEHHA’s updated guidance.  <i>Susan Nakamura 909.396.3105 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
<b>June</b>	
1156 <sup>1</sup>	<p><b>Further Reductions of Particulate Emissions from Cement Manufacturing Facilities</b>  <i>[Projected Emission Reduction: N/A]</i>                      As part of the 2009 amendments to Rule 1156, cement manufacturing facilities were required to establish and maintain a monitoring network to ensure that the surrounding areas were not exposed to unhealthful levels of hexavalent chromium emanating from the facilities. Since establishing the monitoring networks, no exceedances of the standard established in the amended rule has occurred. Pursuant to the adoption resolution, the proposed rule amendments will address the conditions by which the existing monitoring requirements could be reduced, particularly as they pertain to partial or full facility shutdown and any change in ownership and land use.  <i>Philip Fine 909.396.2239 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
1148.2	<p><b>Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers</b>  <i>[Projected Emission Reduction: N/A]</i>                      Amendments to Rule 1148.2 may be needed to extend the implementation of requirements to submit emissions reports and other necessary changes to be consistent with SB 4.  <i>Susan Nakamura 909.396.3105 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
1420	<p><b>Emissions Standard for Lead</b>  <i>[Projected Emission Reduction: TBD]</i>                      In October 2008, U.S. EPA lowered the National Ambient Air Quality Standard (NAAQS) for lead from 1.5 to 0.15 ug/m3. Proposed Rule 1420 will establish requirements for smaller lead emitting sources that are not covered under Rules 1420.1 and Rule 1420.2 to ensure compliance with the lead NAAQS.  <i>Susan Nakamura 909.396.3105 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>

## ATTACHMENT B

### Toxics Rule Activity Schedule (continued)

June	(continued)
1420.2	<p><b>Emissions Standard for Lead from Metal Melting Operations</b>  <i>[Projected Emission Reduction: TBD]</i>                      In October 2008, U.S. EPA lowered the National Ambient Air Quality Standard (NAAQS) for lead from 1.5 to 0.15 ug/m3. Proposed Rule 1420.2 will establish requirements for medium lead emitting sources to ensure compliance with the lead NAAQS.  <i>Susan Nakamura 909.396.3105 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
July	
1430.1	<p><b>Control of Toxic Air Contaminants from Grinding Operations at Forging Facilities</b>  <i>[Projected Emission Reduction: TBD]</i>                      Proposed Rule 1430.1 will establish emission reduction requirements to control toxic emissions from grinding operations at forging facilities.  <i>Susan Nakamura 909.396.3105 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
November	
1402	<p><b>Control of Toxic Air Contaminants from Existing Sources</b>  <i>[Projected Emission Reduction: TBD]</i>                      Amendments to Rule 1402 will address new or revised toxic air contaminants that have been approved by OEHHA.  <i>Susan Nakamura 909.396.3105 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
1450	<p><b>Control of Methylene Chloride Emissions</b>  <i>[Projected Emission Reduction: N/A]</i>                      Proposed Rule 1450 will establish requirements to control methylene chloride from furniture stripping operations and other sources.  <i>Susan Nakamura 909.396.3105 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
December	
1430	<p><b>Control of Toxic Air Contaminants from Metal Forging, Shredding, Grinding and Other Metal Processing Operations</b>  <i>[Projected Emission Reduction: TBD]</i>                      Proposed Rule 1430 will establish emission reduction requirements to control toxic emissions from grinding operations.  <i>Susan Nakamura 909.396.3105 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>

### To-Be Determined 2015

To-Be Determined	
1148.2	<p><b>Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers</b>  <i>[Projected Emission Reduction: N/A]</i>                      Revisions to Rule 1148.2 may be needed based on information collected through implementation of Rule 1148.2.  <i>Susan Nakamura 909.396.3105 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>



## ATTACHMENT B

### Toxics Rule Activity Schedule (continued)

#### To-Be Determined 2015

<b>To-Be Determined</b>	<b>(continued)</b>
1403	<p><b>Asbestos Emissions from Demolition/Renovation Activities</b>  <i>[Projected Emission Reduction: N/A]</i>                      Amendments to Rule 1403 will include specific requirements when conducting asbestos emitting demolition/renovation activities at schools, daycares, and possibly establishments that have sensitive populations. Amendments may include other provisions to improve the implementation of the rule.  <i>Susan Nakamura 909.396.3105 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
1411	<p><b>Recovery of Recycling of Refrigerants from Motor Vehicle Air Conditioners</b>  <i>[Projected Emission Reduction: TBD]</i>                      The proposed amendments to Rule 1411 will align with existing Clean Air Act requirements to minimize the release of refrigerants during the servicing of motor vehicle air conditioning, incorporate other clarifications and enhance enforceability.  <i>Philip Fine 909.396.2239 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
Reg. IV, IX, X, XI, XIV, XIV, XX, XXX AND XXXV Rules	<p>The Clean Communities Plan has been updated to include new measures to address toxic emissions in the basin. The CCP includes a variety of measures that will reduce exposure to air toxics from stationary, mobile, and area sources (Table 3 of the December 5, 2014 Rule and Control Measure Forecast). Rule amendments may include updates to provide consistency with CARB Statewide Air Toxic Control Measures.</p>
---	<p><b>Mobile Source Measures</b>  <i>[Projected Emission Reduction: TBD]</i>                      The District may adopt measures to limit emissions from mobile sources, both on-road and off-road (nonroad) sources, consistent with the Board's direction to counsel at the October 2014 meeting to explore the District's regulatory authority over mobile sources. These measures may include but are not limited to, transportation control measures, operational limits, fleet rules, credit generation rules, and indirect source rules, such as an indirect source rule for railyards and/or other sources which attract mobile sources.  <i>Henry Hogo 909.396.3184 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>

# ATTACHMENT C

## Other Rule Activity Schedule

This attachment lists those rules or rule amendments for the Governing Board consideration that are designed to improve rule enforceability, SIP corrections, or implementing state or federal regulations.

**2015**

<b>April</b>	
Reg. IX Reg. X	<p><b>Standards of Performance for New Stationary Sources (NSPS)</b>  <b>National Emission Standards for Hazardous Air Pollutants (NESHAPS)</b>  <i>[Projected Emission Reduction: N/A]</i>                      Regulation IX - Standards of Performance for New Stationary Sources and Regulation X - National Emission Standards for Hazardous Air Pollutants, incorporate by reference the corresponding federal requirements. Amendments are being proposed to incorporate the latest federal revisions.  <i>Philip Fine 909.396.2239 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
<b>May</b>	
219	<p><b>Equipment Not Requiring a Written Permit Pursuant to Regulation II</b>  <i>[Projected Emission Reduction: N/A ]</i>                      Amendments to Rule 219 may be proposed to exclude equipment with de minimis emissions from the requirement to obtain written permits and clarify provisions pertaining to super-compliant technologies.  <i>Naveen Berry 909.396.2363 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
Reg. III	<p><b>Fees</b>  <i>[Projected Emission Reduction: N/A]</i>                      Regulation III is being amended with a primary goal to increase fees, at a minimum by the Consumer Price Index. Other minor amendments may also be proposed to correct typos, eliminate out-of-date references, and improve consistency and clarity.  <i>Naveen Berry 909.396.2363 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
415	<p><b>Odors from Animal Rendering</b>  <i>[Projected Emission Reduction: TBD]</i>                      Proposed Rule 415 will provide protection to the public from odors created during animal rendering operations. The proposed rule will incorporate a preventative approach to odors by establishing Best Management Practices and will consider enclosures for operations and processes that generate odors, such as receiving, cooking, processing of oils, tallow and meat, and from wastewater treatment. The proposed rule will also examine requirements for an Odor Mitigation Plan for continuing odor issues at facilities impacted by the rule.  <i>Philip Fine 909.396.2239 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>

# ATTACHMENT C

## Other Rule Activity Schedule (continued)

**2015**

<b>May</b>	<b>(continued)</b>
1166	<p><b>Volatile Organic Compound Emissions from Decontamination of Soil</b>  <i>[Projected Emission Reduction: TBD]</i>                      Amendments to Rule 1166 will expand the applicability to decontamination of soils containing toxic metals. The proposed amended rule would establish additional requirements to control emissions from activities involving storing, handling, and transporting soil contaminated with toxic metals.  <i>Susan Nakamura 909.396.3105 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
2202 <sup>1</sup>	<p><b>On-Road Motor Vehicle Mitigation Options</b>  <i>[Projected Emission Reduction: N/A]</i>                      The Employee Commute Reduction Program Guidelines to Rule 2202 will be amended to streamline the annual reporting process, and to add clarification to specific guideline sections as requested by the regulated community.  <i>Carol Gomez 909.396.3264 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
<b>June</b>	
1148.1 <sup>1</sup>	<p><b>Oil and Gas Production Wells</b>  <i>[Projected Emission Reduction: N/A]</i>                      Amendments may be necessary to improve rule effectiveness in reducing emissions from production wells and associated equipment and improving housekeeping activities to minimize potential nuisance.  <i>Naveen Berry 909.396.2363 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
1148.2	<p><b>Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers</b>  <i>[Projected Emission Reduction: N/A]</i>                      Amendments to Rule 1148.2 may be needed to extend the implementation of requirements to submit emissions reports and other necessary changes to be consistent with SB 4.  <i>Susan Nakamura 909.396.3105 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
<b>July</b>	
416	<p><b>Odors from Kitchen Grease Processing</b>  <i>[Projected Emission Reduction: TBD]</i>                      Proposed Rule 416 will provide protection to the public from odors created during kitchen grease processing operations. The proposed rule will establish Best Management Practices (BMP) to address odors created during delivery and processing of trap grease to affected facilities. In addition, the proposed rule will examine enclosure for wastewater treatment operations and filter cake storage. The proposed rule will also examine requirements for an Odor Mitigation Plan for continuing odor issues at facilities impacted by the rule.  <i>Philip Fine 909.396.2239 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>

# ATTACHMENT C

## Other Rule Activity Schedule (continued)

**2015**

September	
<p>1106 1106.1</p>	<p><b>Marine Coating Operations</b></p> <p><b>Pleasure Craft Coating Operations</b>  <i>[Projected Emission Reduction: N/A]</i>                      The proposed amendments will include any clarifications that may arise due to the compliance verification activities or manufacturer and public input, including the sales prohibition clause.  <i>Naveen Berry 909.396.2363 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
<p>1304.2</p>	<p><b>Greenfield or Existing Electrical Generating Facility Fee for Use of Offsets for Load Serving Entities</b>  <i>[Projected Emission Reduction: TBD]</i>                      Proposed Rule 1304.2 would provide for new, greenfield or additions at existing electrical generating facilities access to the SCAQMD’s internal offset account, subject to qualifying conditions, eligibility, and the payment of a fee to invest in air quality improvement projects consistent with the AQMP. This rule is a companion to the recently adopted Rule 1304.1 and will provide offsets so that new, proposed and other existing electrical generating facilities can compete on a level playing field with existing generating facilities with utility steam boilers, and implement the State’s plan can meet or maintain grid reliability.  <i>Naveen Berry 909.396.2363 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
<p>1304.3</p>	<p><b>Greenfield or Existing Electrical Generating Facility Fee for Use of Offsets for Municipalities</b>  <i>[Projected Emission Reduction: TBD]</i>                      Proposed Rule 1304.3 would provide for new, greenfield or additions at existing electrical generating facilities to access the SCAQMD’s internal offset account, subject to qualifying conditions, eligibility, and the payment of a fee to invest in air quality improvement projects consistent with the AQMP. This rule is a companion to the recently adopted Rule 1304.1 and will provide offsets so that new, proposed and other existing electrical generating facilities run by local municipalities can meet the reliable electric needs of their customers.  <i>Naveen Berry 909.396.2363 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>

## ATTACHMENT C

### Other Rule Activity Schedule (continued)

**2015**

<b>October</b>	
1110.2	<p><b>Emissions from Gaseous- and Liquid-Fueled Engines</b>  <i>[Projected Emission Reduction: N/A]</i>                      The proposed amendments to Rule 1110.2 would potentially extend the compliance date for biogas used to fuel power generators at landfills and municipal waste facilities. The amendment would result in a delay in emission reductions.  <i>Joe Cassmassi 909.396.3155 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
<b>December</b>	
1136	<p><b>Wood Products Coatings</b>  <i>[Projected Emission Reduction: TBD]</i>                      The proposed amendments will include any clarification that may arise due to compliance verification activities or manufacturer and public input, including the sales prohibition clause.  <i>Naveen Berry 909.396.2363 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>

### To-Be Determined 2015

<b>To-Be Determined</b>	
219	<p><b>Equipment Not Requiring a Written Permit Pursuant to Regulation II</b>  <i>[Projected Emission Reduction: N/A]</i>                      Amendments to Rule 219 may be proposed to exclude equipment with de minimis emissions from the requirement to obtain written permits.  <i>Naveen Berry 909.396.2363 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
222	<p><b>Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation I</b>  <i>[Projected Emission Reduction: N/A]</i>                      Amendments for Rule 222 may be proposed to add additional equipment categories to the streamlined filing/registration program of Rule 222.  <i>Naveen Berry 909.396.2363 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
224	<p><b>Incentives for Super-Compliant Technologies</b>  <i>[Projected Emission Reduction: TBD]</i>                      This proposed rule will outline strategies and requirements to incentivize the development, establishment and use of super-compliant technologies. It can be considered as a part of Rule 219 amendments or proposed as a separate incentive rule.  <i>Naveen Berry 909.396.2363 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>

# ATTACHMENT C

## Other Rule Activity Schedule (continued)

### To-Be Determined 2015

<b>To-Be Determined</b>	<b>(continued)</b>
1107	<p><b>Coating of Metal Parts and Products</b>  <i>[Projected Emission Reduction: N/A]</i>                      Potential amendments to Rule 1107 would further reduce VOC emissions and improve rule clarity and enforceability.  <i>Naveen Berry 909.396.2363 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
1118	<p><b>Control of Emissions from Refinery Flares</b>  <i>[Projected Emission Reduction: TBD]</i>                      Amendments may be necessary to address results of the additional analysis required by the adopting resolution for the last amendment. Amendments may also be necessary to implement an AB 32 measure.  <i>Naveen Berry 909.396.2363 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
1147	<p><b>NOx Reductions from Miscellaneous Sources</b>  <i>[Projected Emission Reduction: N/A]</i>                      Amendments may be necessary to address findings of ongoing technology assessment.  <i>Joe Cassmassi 909.396.3155 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
1148.2	<p><b>Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers</b>  <i>[Projected Emission Reduction: N/A]</i>                      Revisions to Rule 1148.2 may be needed based on information collected through implementation of Rule 1148.2.  <i>Susan Nakamura 909.396.3105 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
1190 Series	<p><b>Fleet Vehicle Requirements</b>  <i>[Projected Emission Reduction: TBD]</i>                      Amendments to Rule 1190 series fleet rules may be necessary to address remaining outstanding implementation issues and in the event the court's future action requires amendments. In addition, the current fleet rules may be expanded to achieve additional air quality and air toxic benefits.  <i>Dean Saito 909.396.2647 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
Reg. XIII	<p><b>New Source Review</b>  <i>[Projected Emission Reduction: TBD]</i>                      Amendments may be necessary to address U.S. EPA comments on SIP approvability issues and/or requirements. Amendments may also be proposed for clarity and improved enforceability.  <i>Naveen Berry 909.396.2363 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
1902	<p><b>Transportation Conformity</b>  <i>[Projected Emission Reduction: TBD]</i>                      Amendments to Rule 1902 may be necessary to bring the District's Transportation Conformity rule in line with current U.S. EPA requirements.  <i>Susan Nakamura 909.396.3105 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>

## ATTACHMENT C

### Other Rule Activity Schedule (continued)

#### To-Be Determined 2015

<b>To-Be Determined</b>	<b>(continued)</b>
2511	<p><b>Credit Generation Program for Locomotive Head End Power Unit Engines</b>  <i>[Projected Emission Reduction: TBD]</i>                      Develop a rule to allow generation of PM mobile source emission reduction credits from Locomotive Head End Power Unit Engines. Credits will be generated by retrofitting engines with PM controls or replacing the engines with new lower-emitting engines.  <i>Randall Pasek 909.396.2251 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
2512	<p><b>Credit Generation Program for Ocean-Going Vessels at Berth</b>  <i>[Projected Emission Reduction: TBD]</i>                      Develop a rule to allow generation of PM, NOx and SOx emission reduction credits from ocean-going vessels while at berth. Credits will be generated by controlling the emissions from auxiliary engines and boilers of ships while docked.  <i>Randall Pasek 909.396.2251 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
Reg. IV, IX, X, XI, XIV, XX, XXX AND XXXV Rules	<p>Various rule amendments may be needed to meet the requirements of state and federal laws, implement OEHHA revised risk assessment guidance, address variance issues/ technology-forcing limits, to abate a substantial endangerment to public health or welfare, or to seek additional reductions to meet the SIP short-term measure commitment. The associated rule development or amendments include, but are not limited to, SCAQMD existing rules listed in Table 1 of the December 5, 2014 Rule and Control Measure Forecast and new or amended rules to implement the 2012 AQMP measures in Table 2 of the December 5, 2014 Rule and Control Measure Forecast. The CCP has been updated to include new measures to address toxic emissions in the basin. The CCP includes a variety of measures that will reduce exposure to air toxics from stationary, mobile, and area sources (Table 3 of the December 5, 2014 Rule and Control Measure Forecast). Rule amendments may include updates to provide consistency with CARB Statewide Air Toxic Control Measures.</p>

# ATTACHMENT D

## Climate Change

This attachments lists rules or rule amendments for Governing Board consideration that are designed to implement SCAQMD’s Climate Change Policy or for consistency with state or federal rules.

### To-Be Determined 2015

<b>To-Be Determined</b>	
1118	<p><b>Control of Emissions from Refinery Flares</b>  <i>[Projected Emission Reduction: TBD]</i>                      Amendments may be necessary to address findings from the additional analysis required by the adopting resolution for the last amendment. Amendments may also be necessary to implement an AB 32 measure.  <i>Naveen Berry 909.396.2363 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
Reg. XXVII	<p><b>Climate Change</b>  <i>[Projected Emission Reduction: TBD]</i>                      Additional protocols may be added to Rules 2701 and 2702 and amendments to existing rules may be needed to address implementation issues.  <i>Susan Nakamura 909.396.3105 CEQA: Krause 909.396.2706 Socio: Cassmassi 909.396.3155</i></p>
Reg. IV, IX, X, XI, XIV, XX, XXX and XXXV Rules	<p>Rule developments/amendments may be needed to meet the requirements of state and federal laws related to climate change air pollutants.</p>



BOARD MEETING DATE: March 6, 2015

AGENDA NO. 15

PROPOSAL: Report of RFQs Scheduled for Release in March

SYNOPSIS: This report summarizes the RFQs for budgeted services over \$75,000 scheduled to be released for advertisement for the month of March.

COMMITTEE: Administrative, February 13, 2015; Recommended for Approval

RECOMMENDED ACTION:  
Approve the release of RFQs for the month of March.

Barry R. Wallerstein, D.Env.  
Executive Officer

MBO:lg

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### **Background**

At its January 8, 2010 meeting, the Board approved a revised Procurement Policy and Procedure. Under the revised policy, RFQs for budgeted items over \$75,000, which follow the Procurement Policy and Procedure, no longer require individual Board approval. However, a monthly report of all RFQs over \$75,000 is included as part of the Board agenda package and the Board may, if desired, take individual action on any item. The report provides the title and synopsis of the RFQ, the budgeted funds available, and the name of the Deputy Executive Officer/Asst. Deputy Executive Officer responsible for that item. Further detail including closing dates, contact information, and detailed proposal criteria will be available online at <http://www.aqmd.gov/grants-bids> following Board approval on March 6, 2015.

### **Outreach**

In accordance with SCAQMD's Procurement Policy and Procedure, a public notice advertising the RFQs and inviting bids will be published in the Los Angeles Times, the Orange County Register, the San Bernardino Sun, and Riverside County's Press Enterprise newspapers to leverage the most cost-effective method of outreach to the South Coast Basin.

Additionally, potential bidders may be notified utilizing SCAQMD's own electronic listing of certified minority vendors. Notice of the RFQs will be emailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associations, and placed on the Internet at SCAQMD's website (<http://www.aqmd.gov>) where it can be viewed by making the selection "Grants & Bids."

**Proposal Evaluation**

Proposals received will be evaluated by applicable diverse panels of technically-qualified individuals familiar with the subject matter of the project or equipment and may include outside public sector or academic community expertise.

**Attachment**

Report of RFQs Scheduled for Release in March 2015

**March 6, 2015 Board Meeting  
Report on RFQs Scheduled for Release on March 6, 2015**

(For detailed information visit SCAQMD's website at  
<http://www.aqmd.gov/rfp/index.html> following Board approval on March 6, 2015)

**REQUEST FOR QUOTATIONS – Commercial Off-the-Shelf Equipment**

RFQ #Q2015-16	Issue Request For Quotation (RFQ) for one Gas Chromatograph/ Flame Ionization Detector/ Mass Spectrometer System (GC/FID/MS)	TISOPULOS/3123
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At its May 2, 2014 meeting, the Board appropriated funding and authorized enhancements to the SCAQMD's Air Toxic Monitoring Program. One authorized purchase was for a Gas Chromatograph / Mass Spectrometer system. The present systems are no longer supported by the vendor and are not capable of meeting U.S. EPA's newly mandated National Air Toxics Trends Stations (NATTS) Program lower detection limits. It is critically important to meet these lower detection limits for this study and future toxics studies. Funds for this item are included in the FY 2014-15 Budget.

BOARD MEETING DATE: March 6, 2015

AGENDA NO. 16

REPORT: FY 2014-15 Contract Activity

SYNOPSIS: This report lists the number of contracts let during the first six months of FY 2014-15, the respective dollar amounts, award type, and the authorized contract signatory for the SCAQMD.

COMMITTEE: No Committee Review

RECOMMENDED ACTION:  
Receive and file.

Barry R. Wallerstein, D.Env.  
Executive Officer

MOK:DH:EA:lg

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### **Background**

Since FY 1995-96, staff has provided semi-annual reports to the Board on contract activity. This report identifies five categories of contract awards: 1) New Awards – new contracts for professional services and research projects; 2) Other – air monitoring station leases, Board Assistant agreements, or other miscellaneous agreements; 3) Sponsorships – contracts funding public events and technical conferences which provide air quality related benefits; 4) Amendments – modifications to existing contracts usually reflecting changes in the project scope and/or schedule; 5) Terminated Contracts – Partial Work Performed – modifications to contracts to reflect termination of a portion or all of the work which result in de-obligation of contract funding. The report further specifies under New Awards, which contracts were awarded competitively and which were awarded on a sole-source basis. Within the first four categories, the level of approval (Board or Executive Officer) is indicated.

### **Summary**

Of the 895 contracts and modifications (including terminations) issued during this period, New Awards accounted for 696, Other accounted for 22, Sponsorships accounted for 7, and Modifications accounted for 170. The total value for New Awards was \$103,716,515.00. Of this amount, \$100,589,615.00 or 97% was awarded through the

competitive process. The total value of all contracts and contract modifications for this period was \$107,381,331.40, with 697 contracts and contract modifications totaling \$105,664,000.00 approved by the Board, and 141 contracts and contract modifications totaling \$1,717,331.40 approved by the Executive Officer. This does not include contract modifications for termination with partial work or no work completed which is addressed below. Of this amount, \$678,722.40 representing 20 contracts was for Board Member Assistant contracts as approved by the Board’s Administrative Committee; \$690,400.00 representing 19 contracts was sole sourced in the areas of technical consulting and litigation/legal services; \$66,000.00 representing 7 contracts was for sponsorships and outreach events; and \$267,209.00 representing 94 contracts was for contract modifications for extensions of time or additional budgeted services from previously approved vendors. Contract terminations with partial or no work completed numbered 57 during this period and de-obligated a total of \$6,974,474.83.

<b>CONTRACT CATEGORY</b>	<b>NUMBER</b>	<b>AMOUNT</b>
NEW AWARDS	696	\$103,716,515.00
OTHER	22	\$ 678,722.40
SPONSORSHIPS	7	\$ 66,000.00
MODIFICATIONS	113	\$ 2,920,094.00
TERMINATIONS	57	-\$ 6,974,474.83

**Attachment**

Contract Activity Report for the period July 1, 2014 through December 31, 2014

**South Coast Air Quality Management District**  
**Contract Activity Report**  
**July 1, 2014 - December 31, 2014**

DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
<b>I. NEW AWARDS</b>							
<b>Competitive - Board Approved</b>							
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12376	31	TECHNICAL ASSISTANCE FOR AIR POLLUTION FORMATION AND CONTROL, ADVANCED TRANSPORTATION TECHNOLOGIES AND SYSTEMS, EMISSIONS MEASUREMENTS AND ANALYSIS, ALTERNATIVE FUEL TECHNOLOGIES, SUSTAINABLE ENERGY SYSTEMS, AND OFF-ROAD VEHICLES AND EQUIPMENT	UNIVERSITY OF CALIFORNIA, RIVERSIDE	\$75,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14062	61	CONSTRUCT A ONE MILE CATENARY SYSTEM & DEVELOP AND DEMONSTRATE A DIESEL CATENARY HYBRID ELECTRIC TRUCK	SIEMENS INDUSTRY, INC.	\$13,500,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14077	32	REPOWER 2 MAIN ENGINES ON 1 MARINE VESSEL	ANTHONY G. COMBS	\$157,250.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14101	32	REPOWER 1 MAIN ENGINE ON 1 MARINE VESSEL	PHILIP MINUTO	\$63,908.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14125	32	REPOWER 1 MAIN ENGINE ON 1 MARINE VESSEL	TERRY BOYD	\$62,972.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14167	17	OUTREACH WORKSHOPS & ASSISTANCE TO WORKPLACES & FLEETS	SOUTHERN CALIFORNIA ASSOCIATION OF GOVT	\$105,000.00	
26	PLANNING RULE DEV & AREA SOURCES	C14171	31	AIR POLLUTION HEALTH EFFECTS - IN-UTERO EXPOSURES TO TRAFFIC RELATED POLLUTANTS	SOUTHERN CALIFORNIA RESEARCH	\$99,670.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14177	81	PROP 1B TRUCK REPLACEMENT LEASE-TO-OWN PROGRAM	VENTURA TRANSFER COMPANY	\$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14178	32	REPOWER 4 OFF-ROAD VEHICLES	DAN COPP CRUSHING CORPORATION	\$708,770.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14258	81	PROP 1B TRUCK REPLACEMENT PROGRAM	A-G SOD FARMS, INC.	\$550,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14318	32	REPOWER OF 3 OFF-ROAD VEHICLES	RENTRAC INC	\$347,428.00	

**South Coast Air Quality Management District**  
**Contract Activity Report**  
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<b>DEPT ID</b>	<b>DEPT NAME</b>	<b>CONTRACT NUMBER</b>	<b>FUND CODE</b>	<b>DESCRIPTION</b>	<b>VENDOR NAME</b>	<b>CONTRACT AMOUNT</b>	<b>FOOT NOTE</b>
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14326	32	REPOWER 3 OFF-ROAD VEHICLES	PEED EQUIPMENT	\$475,326.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14327	32	REPLACEMENT OF 6 DIESEL SCRAPERS	RENTRAC INC	\$2,236,265.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14328	81	PROP 1B TRUCK REPLACEMENT PROGRAM	BIAGI BROS. INC	\$900,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14329	81	PROP 1B TRUCK REPLACEMENT PROGRAM	M & V EQUIPMENT, LLC	\$300,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14331	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PARKHOUSE TIRE INC.	\$325,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14333	81	PROP 1B TRUCK REPLACEMENT PROGRAM	WESTSIDE BUILDING MATERIAL CORP	\$410,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14338	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DENNIE MANNING CONCRETE INC	\$150,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14339	81	PROP 1B TRUCK REPLACEMENT PROGRAM	NP TRUCKING MANAGEMENT, INC	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14340	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ADAMS & SONS TRANSPORATION, INC.	\$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14341	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CERENZIA FOODS INC.	\$140,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14342	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CPC TRANSPORTATION CO, LLC	\$535,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14343	81	PROP 1B TRUCK REPLACEMENT PROGRAM	NUCKLES OIL CO., INC. DBA MERIT OIL CO.	\$200,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14344	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RRM PROPERTIES, LTD	\$16,200,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14345	81	PROP 1B TRUCK REPLACEMENT PROGRAM	VAN DYK TANK LINES, INC.	\$650,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14346	81	PROP 1B TRUCK REPLACEMENT PROGRAM	AJR TRUCKING, INC.	\$845,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14349	81	PROP 1B TRUCK REPLACEMENT PROGRAM	HASCO OIL CO., INC	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14350	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LINCOLN TRANSPORATION SERVICES INC.	\$275,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14351	81	PROP 1B TRUCK REPLACEMENT PROGRAM	TOWERS ENVIRONMENTAL, INC	\$100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14352	81	PROP 1B TRUCK REPLACEMENT PROGRAM	W C LOGISTICS INC.	\$1,450,000.00	

**South Coast Air Quality Management District**  
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<b>DEPT ID</b>	<b>DEPT NAME</b>	<b>CONTRACT NUMBER</b>	<b>FUND CODE</b>	<b>DESCRIPTION</b>	<b>VENDOR NAME</b>	<b>CONTRACT AMOUNT</b>	<b>FOOT NOTE</b>
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14353	81	PROP 1B TRUCK REPLACEMENT PROGRAM - THREE WAY TRANSACTION PROJECT	HASCO OIL CO., INC	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14354	81	PROP 1B TRUCK REPLACEMENT PROGRAM	TELLURIC PETROLEUM TRANSPORT, INC.	\$100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14356	32	REPLACEMENT OF 2 OFF-ROAD VEHICLES WITH 1 OFF-ROAD VEHICLE	SUKUT CONSTRUCTION, INC.	\$312,631.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14361	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CALPORTLAND CONSTRUCTION	\$105,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14362	81	PROP 1B TRUCK REPLACEMENT PROGRAM	GARDNER TRUCKING, INC.	\$4,750,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14363	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JORLEASE, INC	\$455,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14364	31	DEVELOPMENT, INTEGRATION, AND DEMONSTRATION OF ULTRA-LOW EMISSION NATURAL GAS ENGINES FOR ON-ROAD HEAVY DUTY VEHICLES	CUMMINS POWER GENERATION INC	\$2,061,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14367	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ALICIA VELAZQUEZ	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14368	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ANTONIO MARTINEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14369	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CRUZ AGUILAR	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14370	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ELENA AVITIA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14371	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JUAN FRANCISCO CORONADO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14372	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LUIS LOPEZ	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14373	81	PROP 1B TRUCK REPLACEMENT PROGRAM	NORBERTO LOPEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14374	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SERGIO ENRIQUE CARO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14378	63	UPGRADE CITY OF BURBANK HYDROGEN FUELING STATION	H2 FRONITER, INC.	\$930,800.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14379	81	PROP 1B TRUCK REPLACEMENT PROGRAM	VANESSA DELGADO	\$40,000.00	



**South Coast Air Quality Management District**  
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**July 1, 2014 - December 31, 2014**

<b>DEPT ID</b>	<b>DEPT NAME</b>	<b>CONTRACT NUMBER</b>	<b>FUND CODE</b>	<b>DESCRIPTION</b>	<b>VENDOR NAME</b>	<b>CONTRACT AMOUNT</b>	<b>FOOT NOTE</b>
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14380	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ADVANCED RIGGERS & MILLWRIGHTS LLC	\$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14381	81	PROP 1B TRUCK REPLACEMENT PROGRAM	VICTOR MIRAMONTES	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14382	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RALPH V. ADAMS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14384	81	PROP 1B TRUCK REPLACEMENT PROGRAM	VINUEZA TRUCKING	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14386	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DEMECIO AVILA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14387	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DEMMING VALIENTE	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14388	81	PROP 1B TRUCK REPLACEMENT PROGRAM	AC TRANSPORT SERVICES INC.	\$75,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14389	81	PROP 1B TRUCK REPLACEMENT PROGRAM	AGL TRANSPORT INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14390	81	PROP 1B TRUCK REPLACEMENT PROGRAM	WAYNES 1 WAY TRUCKING, INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14391	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CORDOVA SOLUTIONS, INC.	\$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14392	81	PROP 1B TRUCK REPLACEMENT PROGRAM	P.A. PARKER, INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14393	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RUDY GAITAN TRUCKING INC.	\$120,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14394	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ABELARDO NAVAR	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14395	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ALFREDO AGUIRRE	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14396	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ALVARO SANCHEZ LOPEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14398	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RICARDO JIMENEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14399	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ARMANDO REYES	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14400	81	PROP 1B TRUCK REPLACEMENT PROGRAM	BALBIR SINGH HANSPAL	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14401	81	PROP 1B TRUCK REPLACEMENT PROGRAM	EDUARDO P MELENDEZ	\$40,000.00	

**South Coast Air Quality Management District**  
**Contract Activity Report**  
**July 1, 2014 - December 31, 2014**

<b>DEPT ID</b>	<b>DEPT NAME</b>	<b>CONTRACT NUMBER</b>	<b>FUND CODE</b>	<b>DESCRIPTION</b>	<b>VENDOR NAME</b>	<b>CONTRACT AMOUNT</b>	<b>FOOT NOTE</b>
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14402	81	PROP 1B TRUCK REPLACEMENT PROGRAM	HECTOR GUTIERREZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14403	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JORGE LUIS RODRIGUEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14406	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SHINGARA SINGH	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14407	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JUAN VILLASENOR	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14408	81	PROP 1B TRUCK REPLACEMENT PROGRAM	NELSON PORTILLO	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14409	32	OPERATE 2 REPOWERED SCRAPERS	JCE EQUIPMENT, INC.	\$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14410	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ANDRES BECERRA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14411	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FIDEL BADILLA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14412	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DIRECT TRANSPORTATION INC.	\$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14413	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ESL TRANSPORT INC.	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14414	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DAGOBERTO C. CALZADO	\$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14415	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MARIO SOLIS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14416	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RAFAEL ZERMENO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14417	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RAUL RAYA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14418	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE LUIS TOMATANI	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14419	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JAIME VILLATORO	\$40,000.00	
27	INFORMATION MANAGEMENT	C14420	2	PHONE SYSTEM REPLACEMENT	EPOCH UNIVERSAL, INC	\$1,555,847.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14422	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ROCIO ELIZABETH FIALLO	\$105,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14423	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ALBERTO CABALLERO	\$40,000.00	

**South Coast Air Quality Management District**  
**Contract Activity Report**  
**July 1, 2014 - December 31, 2014**

<b>DEPT ID</b>	<b>DEPT NAME</b>	<b>CONTRACT NUMBER</b>	<b>FUND CODE</b>	<b>DESCRIPTION</b>	<b>VENDOR NAME</b>	<b>CONTRACT AMOUNT</b>	<b>FOOT NOTE</b>
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14424	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JAVIER GALINDO	\$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14425	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SALVADOR GOMEZ MARQUEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14426	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE JIMENEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14427	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MARGARITO MORALES	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14428	81	PROP 1B TRUCK REPLACEMENT PROGRAM	HIRAM GOMEZ	\$75,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14429	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RALPH OMAR GONZALES	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14430	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RANJIT SINGH	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14431	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FRANCISCO RAYA	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14432	81	PROP 1B TRUCK REPLACEMENT PROGRAM	BLUE ICE LOGISTICS, INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14433	81	PROP 1B TRUCK REPLACEMENT PROGRAM	BULLY EXPRESS LLC	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14434	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ET TRANSPORTATION INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14435	81	PROP 1B TRUCK REPLACEMENT PROGRAM	F&A EXPRESS, INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14436	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JESSE GONZALEZ TRUCKING, INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14437	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JSA TRANSPORTATION LLC	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14439	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MUSE EXPRESS INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14440	81	PROP 1B TRUCK REPLACEMENT PROGRAM	AGUSTIN ALAMILLA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14441	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SALMEX FREIGHT, INC.	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14442	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ALFREDO V CARLOS	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14443	81	PROP 1B TRUCK REPLACEMENT PROGRAM	OBEL ANTONIO ARACADIA	\$40,000.00	

**South Coast Air Quality Management District**  
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**July 1, 2014 - December 31, 2014**

<b>DEPT ID</b>	<b>DEPT NAME</b>	<b>CONTRACT NUMBER</b>	<b>FUND CODE</b>	<b>DESCRIPTION</b>	<b>VENDOR NAME</b>	<b>CONTRACT AMOUNT</b>	<b>FOOT NOTE</b>
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14445	81	PROP 1B TRUCK REPLACEMENT PROGRAM	BIG G'S TRANSPORT	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14446	81	PROP 1B TRUCK REPLACEMENT PROGRAM	E ROBLES TRUCKING	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14447	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MIGUEL LUNA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14448	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MARGARITO A. DURAN	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14449	81	PROP 1B TRUCK REPLACEMENT PROGRAM	IRINEO RAMIREZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14450	81	PROP 1B TRUCK REPLACEMENT PROGRAM	BENITO MIKE RAMOS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14451	81	PROP 1B TRUCK REPLACEMENT PROGRAM	VICENTE PINZON	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14452	81	PROP 1B TRUCK REPLACEMENT PROGRAM	APPLEBEE LEASING, INC	\$1,825,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14453	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RAMON A. BLANCO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14454	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DOUGLAS FERNANDO RODRIGUEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14455	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ENRIQUE OROZCO	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14457	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE VICENTE RIVERA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14458	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DAVID MAURICIO CHAIREZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14460	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PEDRO E. PEREZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14461	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MARIO CHAVEZ SALAZAR	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14462	81	PROP 1B TRUCK REPLACEMENT PROGRAM	GABRIEL SOLANO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14465	81	PROP 1B TRUCK REPLACEMENT PROGRAM	NICOLAS ACERO	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14467	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DRHV TRUCKING INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14469	81	PROP 1B TRUCK REPLACEMENT PROGRAM	HOLLYWOOD BED & SPRING MFG. CO, INC.	\$105,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14470	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE AGUIRRE ORNELAS	\$45,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14471	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MARTIN SERRANO MARTINEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14473	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSEFINA CAMAYO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14478	81	PROP 1B TRUCK REPLACEMENT PROGRAM	I AND M LOGISTIC TRANSPORT INC.	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14480	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CASE TRANSPORTATION INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14481	81	PROP 1B TRUCK REPLACEMENT PROGRAM	D.OWEN INC.	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14483	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LAS MARIAS PALLETS	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14484	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE JUAN MARQUEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14485	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CARLOS MONTOYA	\$150,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14486	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RAMIRO MELGOZA MEZA	\$49,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14487	81	PROP 1B TRUCK REPLACEMENT PROGRAM	IGNACO MARTIN DEL CAMPO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14490	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MURAD MIKE MINASYAN	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14491	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DARIN BRASSARD	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14492	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOHN E. HERNANDEZ	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14493	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ARTURO LIRA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14494	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CUPERTINO BRAVO	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14495	81	PROP 1B TRUCK REPLACEMENT PROGRAM	GURSHARAN S SANDHU	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14496	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PAVEL ORLIK	\$45,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14497	81	PROP 1B TRUCK REPLACEMENT PROGRAM	WALTER LOPEZ	\$35,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14498	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DARRICK MURPHY STONE	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14499	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ANTONIO VELASCOS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14500	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ALFREDO MAGANA ALCALA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14501	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CARLOS RAMIREZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14502	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DAN CAVALLO, INC.	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14503	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DENNIS D. MEJIA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14504	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DONALDO'S TRANSPORT	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14505	81	PROP 1B TRUCK REPLACEMENT PROGRAM	EL MAGUEY EXPRESS TRANSPORT	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14507	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LUIS E ESCOBAR	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14508	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FELIPE DE JESUS RIVAS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14509	81	PROP 1B TRUCK REPLACEMENT PROGRAM	VICENTE MARTINEZ HERNANDEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14514	81	PROP 1B TRUCK REPLACEMENT PROGRAM	A-G SOD FARMS, INC.	\$200,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14515	81	PROP 1B TRUCK REPLACEMENT PROGRAM	REGINA TAYLOR	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14516	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JUAN CARLOS GASTELUM	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14517	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ISRAEL SIFONTES	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14518	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DANNY ARREDONDO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14519	81	PROP 1B TRUCK REPLACEMENT PROGRAM	HINOJOSA TRUCKING INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14520	81	PROP 1B TRUCK REPLACEMENT PROGRAM	HECTOR M LLAMAS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14521	81	PROP 1B TRUCK REPLACEMENT PROGRAM	GUILLERMO VILLALPANDO	\$40,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14522	81	PROP 1B TRUCK REPLACEMENT PROGRAM	GUADALUPE SANCHEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14523	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOAQUIN FUENTES	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14524	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FRANCISCO RIVAS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14525	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ALEJANDRO GODFREY	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14526	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ALONSO AMADOR	\$75,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14527	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CESAR SERRANO CRUZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14528	81	PROP 1B TRUCK REPLACEMENT PROGRAM	COINCRE TRUCKING, INC.	\$85,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14529	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DMJ TRUCKING INC.	\$105,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14530	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ESQ DELIVERY SERVICES	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14531	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FEDERICO GAYTAN	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14532	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FOSTER AND SONS RECYLING INC.	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14533	81	PROP 1B TRUCK REPLACEMENT PROGRAM	GILBERT CANTELLANO	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14534	81	PROP 1B TRUCK REPLACEMENT PROGRAM	GIOVANNI B. CARBALLO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14537	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ARTURO DOMINGUEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14538	81	PROP 1B TRUCK REPLACEMENT PROGRAM	GREGORIO AYALA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14539	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ANGEL ALBERTO ARROYO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14540	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ARMANDO ABEDOY	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14541	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ARTURO CARRERA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14542	81	PROP 1B TRUCK REPLACEMENT PROGRAM	AUDAZ TRANSPORT, INC.	\$50,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14544	81	PROP 1B TRUCK REPLACEMENT PROGRAM	C & C AMERICA INC.	\$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14546	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JACQUELYN R. LIMON	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14547	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE E. FLORES	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14548	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE JAIME MARTINEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14549	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE JESUS GALVEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14550	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE M. SOTELO	\$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14551	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LILLYAM IVETTE CENTENO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14552	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LUIS JESUS MEDINA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14553	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JAMES DEITEMEYER	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14554	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOVIC TRANSPORT INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14555	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JULIO CESAR VASQUEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14556	81	PROP 1B TRUCK REPLACEMENT PROGRAM	KB MIRAMONTES, INC.	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14557	81	PROP 1B TRUCK REPLACEMENT PROGRAM	HENRY CASTORENA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14558	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LEONARDO DIAZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14559	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CATARINO LEON	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14560	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PABLO A SANDOVAL	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14561	81	PROP 1B TRUCK REPLACEMENT PROGRAM	M & J TRANSPORTATION SERVICES, INC.	\$49,500.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14562	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MANUEL ANTONIO MURCIA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14563	81	PROP 1B TRUCK REPLACEMENT PROGRAM	HECTOR MANUEL RAMIREZ	\$40,000.00	



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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14564	81	PROP 1B TRUCK REPLACEMENT PROGRAM	GEVORG KHUDYAN	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14565	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE JESUS FRANCO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14566	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SLEEPING BEAR, INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14568	81	TECHNICAL ASSISTANCE, IMPLEMENTATION & OUTREACH SUPPORT FOR PROP 1B GOODS MOVEMENT PROGRAM	TETRA TECH INC	\$250,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14569	81	PROP 1B TRUCK REPLACEMENT PROGRAM	TRANSPORTATION COMMODITIES INC.	\$900,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14570	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ALVARO A. LOPEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14571	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JAIME HINOSTROZA	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14572	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JAIME JUAREZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14573	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JONATHAN HEGVOLD	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14574	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ANTONIO JAIME	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14576	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SOMOHANO EXPRESS GROUP INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14577	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DANIEL S. RODRIGUEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14578	81	PROP 1B TRUCK REPLACEMENT PROGRAM	TED SOLOMON TRUCKING, INC.	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14579	81	PROP 1B TRUCK REPLACEMENT PROGRAM	HECTOR ESCOBEDO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14580	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ALFREDO NAVARRO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14581	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RODRIGO AGUILAR	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14582	81	PROP 1B TRUCK REPLACEMENT PROGRAM	VICTOR AGUILAR	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14583	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CARLOS BAUTISTA	\$40,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14584	81	PROP 1B TRUCK REPLACEMENT PROGRAM	BEN'S ASPHALT INC.	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14585	81	PROP 1B TRUCK REPLACEMENT PROGRAM	GABRIEL M FLORES	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14586	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE H. TALAMANTES	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14587	81	PROP 1B TRUCK REPLACEMENT PROGRAM	GERARDO MEZA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14588	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MANUEL ARTURO VIDEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14590	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PONCIANO ARZATE	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14591	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RAFAEL CHAVEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14592	81	PROP 1B TRUCK REPLACEMENT PROGRAM	WILLIAM RAMOS	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14594	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RONY ENRIQUE RICHARD	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14595	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RUBEN GONZALEZ ALVARADO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14596	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PEDRO RUIZ GARCIA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14597	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE SANCHEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14598	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ANDRES SANDOVAL	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14599	81	PROP 1B TRUCK REPLACEMENT PROGRAM	HOWARD JAFFA	\$49,850.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14600	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MIGUEL A. MORENO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14601	81	PROP 1B TRUCK REPLACEMENT PROGRAM	TRI MINH BUI	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14602	81	PROP 1B TRUCK REPLACEMENT PROGRAM	TRANSPORT SPECIALTIES, INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14603	81	PROP 1B TRUCK REPLACEMENT PROGRAM	TRANSPORTES DEL PACIFICO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14604	81	PROP 1B TRUCK REPLACEMENT PROGRAM	TRUDELL TRUCKING INC.	\$85,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14605	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE PABLO ULLOA	\$70,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14606	81	PROP 1B TRUCK REPLACEMENT PROGRAM	VICTOR MANUEL HERNANDEZ	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14607	81	PROP 1B TRUCK REPLACEMENT PROGRAM	W & N TRANSPORT INC.	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14608	81	PROP 1B TRUCK REPLACEMENT PROGRAM	WALTER W. RODRIGUEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14609	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JORGE GONZALEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14610	81	PROP 1B TRUCK REPLACEMENT PROGRAM	NANETTE PARTEN	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14611	81	PROP 1B TRUCK REPLACEMENT PROGRAM	NICOLAS TRINIDAD	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14612	81	PROP 1B TRUCK REPLACEMENT PROGRAM	HUMBERTO E NORENA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14613	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE JESUS SANCHEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14614	81	PROP 1B TRUCK REPLACEMENT PROGRAM	NOTW TRUCKING INC.	\$49,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14617	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PABLO A BENITEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14618	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PABLO CESAR PRIMUCCI	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14619	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CARLOS PANTOJA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14624	81	PROP 1B TRUCK REPLACEMENT PROGRAM-LEASE-TO-OWN (LESSEE)	ROCKVIEW DAIRIES, INC.	\$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14625	81	PROP 1B TRUCK REPLACEMENT PROGRAM -LEASE-TO-OWN (LESSOR)	CATERER'S LEASING INC	\$85,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14626	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PAN PACIFIC PETROLEUM	\$200,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14628	81	PROP 1B TRUCK REPLACEMENT PROGRAM	VILLA PARK TRUCKING, INC.	\$310,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14630	81	PROP 1B TRUCK REPLACEMENT PROGRAM	AURELIO GARCIA HARRIZON	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14631	81	PROP 1B TRUCK REPLACEMENT PROGRAM	BDC ENTERPRISES INC.	\$50,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14632	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CARLOS VARGAS PASILLAS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14633	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CHARLIE LIKINS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14635	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PAUL COOK'S TRANSPORT LLC	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14636	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SEVEN TRANSPORTATION, INC.	\$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14637	81	PROP 1B TRUCK REPLACEMENT PROGRAM	T & R LUMBER CO., INC.	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14639	81	PROP 1B TRUCK REPLACEMENT PROGRAM	AZTECA MAGIC TRANSPORT INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14640	81	PROP 1B TRUCK REPLACEMENT PROGRAM	BRIAN J LANGFORD	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14641	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CHAVEZ BROS. ENTERPRISES, INC.	\$78,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14642	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CONSTRUCTION SERVICES & RECYLING, INC.	\$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14643	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOHN YAMAHIRO	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14644	81	PROP 1B TRUCK REPLACEMENT PROGRAM	G AND A EXPRESS LLC	\$39,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14645	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LIMON TRUCKING INC.	\$120,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14646	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LOERA TRUCKING	\$49,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14647	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LUCKY TRANSPORT ENTERPRISES, INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14648	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FELIPE HUERTA RAYGOZA	\$75,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14649	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SOUTHLAND XPRESS INC.	\$120,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14650	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SEAN M. BRODIE	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14651	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE AGUILAR	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14652	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JUAN CAUDILLO	\$40,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14653	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LUIS F. BONILLA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14654	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RAFAEL TELLES	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14655	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RAMON SOLIS	\$40,000.00	
16	ADMINISTRATIVE & HUMAN RESOURCES	C14657	01	WORKER'S COMPENSATION CLAIMS THIRD PARTY ADMINISTRATOR	ADMINSURE, INC	\$55,087.00	
16	ADMINISTRATIVE & HUMAN RESOURCES	C14658	01	CONFERENCE SEATING REPLACEMENT	AMERICAN SEATING CO	\$139,167.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14659	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ALL AROUND SEPTIC	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14660	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DAN BALOUCHI	\$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14661	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ENRIQUE C TERAN	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14662	81	PROP 1B TRUCK REPLACEMENT PROGRAM	GONZALEZ BRAMS TRUCKING	\$36,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14663	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FRANCISCO JIMENEZ	\$49,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14664	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LEDESMA & SONS TRUCKING INC.	\$100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14665	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MIGUEL SANCHEZ	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14666	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ARNULFO NUNCIO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14667	81	PROP 1B TRUCK REPLACEMENT PROGRAM	EVERARDO ROCHA	\$39,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14668	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SANTIAGO SANCHEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14671	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FRESH IS BEST	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14672	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RAFAEL HEREDIA	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14674	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MARTIN GARCIA	\$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14675	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RUBEN COVARRUBIAS	\$50,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14676	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ANTHONY JOE RINCON	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14677	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SV TRANSPORT, INC.	\$120,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14678	81	PROP 1B TRUCK REPLACEMENT PROGRAM	AJEET SINGH	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14679	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DOLLAR TRUCKING	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14686	32	REPLACEMENT OF 2 OFF-ROAD DIESEL VEHICLES	LOS ANGELES COUNTY SANITATION DISTRICT	\$312,046.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15029	62	RETROFIT OF DPF TECHNOLOGY ON STANDBY BACKUP GENERATOR AT WATSON ROAD BOOSTER	EASTERN MUNICIPAL WATER DISTRICT	\$33,415.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15030	62	RETROFIT OF DPF TECHNOLOGY ON STAND-BY BACK-UP GENERATOR AT LETTERMAN BOOSTER	EASTERN MUNICIPAL WATER DISTRICT	\$43,454.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15031	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ALAN C. OCHOA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15032	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ANGEL RODRIGUEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15033	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ARMANDO GUEVARA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15034	81	PROP 1B TRUCK REPLACEMENT PROGRAM	B.A.VARELA	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15035	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CLAUDIA HORTA	\$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15036	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ISRAEL TORRES VILLEGAS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15037	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOEL MUNGUJA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15038	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JORGE SANCHEZ ROJAS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15039	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE E. MARTINEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15042	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JUAN MACIAS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15043	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MARCO MARTINEZ	\$40,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15044	81	PROP 1B TRUCK REPLACEMENT PROGRAM	NELTON WILFREDO LINARES BENITEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15045	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PAUL F. BOURELLE	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15046	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SALVADOR DIAZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15047	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SANDRA L. ALZATE	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15048	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SERGIO ANTONIO SOTO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15050	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CARLOS GONZALEZ	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15051	81	PROP 1B TRUCK REPLACEMENT PROGRAM	W & J LAZARO, INC.	\$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15052	81	PROP 1B TRUCK REPLACEMENT PROGRAM	AMERICAN TRANSLINE	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15053	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ARMANDO R. CASTRO	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15054	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ANTHONY D GHENO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15056	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JORGE ANAYA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15057	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JAVIER HERNANDEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15058	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JROD BROTHERS INC.	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15059	81	PROP 1B TRUCK REPLACEMENT PROGRAM	KEYSTONE AUTO TRANSPORT. INC.	\$39,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15060	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SARKIS MKRTCHYAN	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15061	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SOUTHWEST TRUCKING GROUP, LLC	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15062	81	PROP 1B TRUCK REPLACEMENT PROGRAM	STRAIGHT AT IT INC.	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15063	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JUAN P LOPEZ	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15064	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JUAN R. MEJIA	\$40,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15065	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JESUS MANUEL MATA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15066	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE ELOY ACOSTA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15068	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JORGE JACOBO GONZALEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15069	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SOTERO HERRERA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15070	81	PROP 1B TRUCK REPLACEMENT PROGRAM	BILLY PANAMENO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15071	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CARLOS DIAZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15072	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CONSTANTINO LOPEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15075	81	PROP 1B TRUCK REPLACEMENT PROGRAM	GENARO CERVANTES	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15076	81	PROP 1B TRUCK REPLACEMENT PROGRAM	GEORGE CASTELLO	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15077	81	PROP 1B TRUCK REPLACEMENT PROGRAM	HECTOR BERNAL	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15078	81	PROP 1B TRUCK REPLACEMENT PROGRAM	HUGO SALDANA MORENO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15079	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOEL MANZO GODINEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15080	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE ENRIQUE VELASCO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15081	81	PROP 1B TRUCK REPLACEMENT PROGRAM	AA LABORATORY EGGS INC.	\$25,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15084	81	PROP 1B TRUCK REPLACEMENT PROGRAM	J. L. KROPP TRUCKING, INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15085	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PEDRO JIMENEZ	\$25,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15086	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SOUTHERN CALIFORNIA O.T.R. RECYCLING INC	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15088	81	PROP 1B TRUCK REPLACEMENT PROGRAM	TIMES PRODUCE INC.	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15089	81	PROP 1B TRUCK REPLACEMENT PROGRAM	VICTOR VASQUEZ SR.	\$40,000.00	



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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15090	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JESUS RUIZ	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15091	81	PROP 1B TRUCK REPLACEMENT PROGRAM	EUGENIO GARCIA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15092	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SARA J. GOMEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15093	81	PROP 1B TRUCK REPLACEMENT PROGRAM	HAROLDO A. MORALES	\$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15094	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JUAN D. PENA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15095	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JUAN TELLEZ	\$39,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15096	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JUNIOR STEEL CO.	\$25,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15097	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RAMIRO DE LA CUEVA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15098	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MONTANI TRUCKING INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15099	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PRUITT TRUCKING SERVICES, INC.	\$100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15100	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE GUTIERREZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15101	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JUVENTINO MIRANDA	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15102	81	PROP 1B TRUCK REPLACEMENT PROGRAM	AVENUE 8 GROUP INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15104	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RODOLFO R. ORDUNA	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15105	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RAED ALKILANI	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15106	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RESTAD GENERAL ENGINEERING	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15107	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RGE TRUCK LINES, INC.	\$120,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15108	81	PROP 1B TRUCK REPLACEMENT PROGRAM	UNITED CARGO LOGISTICS	\$150,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15111	81	PROP 1B TRUCK REPLACEMENT PROGRAM	TRIUMPH SALES, INC.	\$665,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15112	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ERNESTO PEREZ	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15114	81	PROP 1B TRUCK REPLACEMENT PROGRAM	GLORIA ISABEL PEREZ ORANTES	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15115	81	PROP 1B TRUCK REPLACEMENT PROGRAM	WILLIE JAY BRYANT	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15116	81	PROP 1B TRUCK REPLACEMENT PROGRAM	HECTOR C. PEREZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15117	81	PROP 1B TRUCK REPLACEMENT PROGRAM	GILBERTO MOLINA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15118	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SILVER GALAXY CORPORATION	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15119	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CESAR POLANCO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15120	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JAVIER CATALAN	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15122	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LEODEGARIO SALCIDO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15123	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RUDY ABEDOY	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15124	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ALEJANDRO RODRIGUEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15125	81	PROP 1B TRUCK REPLACEMENT PROGRAM	HERMAN A FLAMENCO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15126	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JBS AUTO TRANSPORT LLC	\$100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15127	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MARK STEVEN GARCIA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15129	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JORGE A BERNAL	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15130	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JUAN ALBERTO SOLARES	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15131	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ROBERT WEST CONSTANTINO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15132	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CPS EXPRESS	\$160,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15133	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SOUTH COAST TRANSPORTATION & DIST. INC.	\$400,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15135	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CAMERON E. ATKIN	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15136	81	PROP 1B TRUCK REPLACEMENT PROGRAM	HECTOR BANDERAS	\$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15139	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PACO MORALES PEREZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15141	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FERDINAND DAVIS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15142	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JUNELLA S DAYTON	\$49,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15143	81	PROP 1B TRUCK REPLACEMENT PROGRAM	QUALITY LOAD TRANSPORT CORP.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15144	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SALVADOR DAVALOS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15150	31	INSTALL/UPGRADE EIGHT HYDROGEN FUELING STATIONS	AIR PRODUCTS & CHEMICALS INC	\$1,000,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15151	81	PROP 1B TRUCK REPLACEMENT PROGRAM	C. TRUCKING, INC.	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15152	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CARLOS PINEDO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15153	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE CASTRO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15154	81	PROP 1B TRUCK REPLACEMENT PROGRAM	D DEL CID TRUCKING INC.	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15157	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PROSPERO FELIX CISNEROS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15158	81	PROP 1B TRUCK REPLACEMENT PROGRAM	NOEL REAL	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15159	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PEDRO SARINANA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15160	81	PROP 1B TRUCK REPLACEMENT PROGRAM	M LEDEZMA INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15161	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MIRAMONTES TRANSPORTATION INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15162	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ANGEL ALDUENDA BARRAZA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15163	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE ARMANDO AYALA	\$40,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15164	81	PROP 1B TRUCK REPLACEMENT PROGRAM	BENITO MARTINEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15166	81	PROP 1B TRUCK REPLACEMENT PROGRAM	NGUYEN GIA ON LY	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15167	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PHILLIP BUTLER	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15168	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CAT 9 EXPRESS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15169	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ISIDRO CORREA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15170	81	PROP 1B TRUCK REPLACEMENT PROGRAM	VBT INC BOWERS TRANSPORT	\$76,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15171	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FRANCO'S EXPRESS TRUCKING, INC.	\$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15172	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FREDY RODRIGUEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15173	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FREDY URIAS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15174	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JORGE GONZALEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15175	81	PROP 1B TRUCK REPLACEMENT PROGRAM	GUILLERMO RUIZ	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15176	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ARNULFO LEMUS CEBALLOS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15177	81	PROP 1B TRUCK REPLACEMENT PROGRAM	GABLE A. BOLAGH	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15178	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ARTHUR GONZALES	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15179	81	PROP 1B TRUCK REPLACEMENT PROGRAM	WILBER M GONZALEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15180	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ARTURO PEREZ	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15181	81	PROP 1B TRUCK REPLACEMENT PROGRAM	GEMS SEAFOODS, INC.	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15182	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ANGEL G. GALVAN	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15183	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE LUIS HERNANDEZ	\$40,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15184	81	PROP 1B TRUCK REPLACEMENT PROGRAM	HECTOR QUINTERO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15185	81	PROP 1B TRUCK REPLACEMENT PROGRAM	EDUARDO RUBEN HOYOS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15186	81	PROP 1B TRUCK REPLACEMENT PROGRAM	IGNACIO CONTRERAS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15187	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PABLO R. MONTOYA DERAS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15188	81	PROP 1B TRUCK REPLACEMENT PROGRAM	J TORRES TRANSPORTATION INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15189	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JUST CARGO XPRESS, INC.	\$120,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15192	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ARAIK OVSEPYAN	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15193	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JULIO H DE LEON	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15194	81	PROP 1B TRUCK REPLACEMENT PROGRAM	EFRAIN GOMEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15195	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FELIX OSORIO	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15197	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FJG TRANSPORT INC	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15198	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE AVILA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15199	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JUAN CARCAMO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15201	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FRANK E. BLISSENBACH	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15203	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MOISES CABRERA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15204	81	PROP 1B TRUCK REPLACEMENT PROGRAM	OSVALDO BARCENAS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15205	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CRAIG REGO	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15207	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE ANGEL RODRIGUEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15208	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JONATHAN MEDINA	\$50,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15209	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE L RODRIGUEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15210	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE ANGEL MALDONADO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15211	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSEPH SHERMAN S MARTINEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15212	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JORGE B. QUIROA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15213	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JULIO GUTIERREZ	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15214	81	PROP 1B TRUCK REPLACEMENT PROGRAM	K-TRANS INC	\$120,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15215	81	PROP 1B TRUCK REPLACEMENT PROGRAM	KGS TRUCKING, INC.	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15216	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FIDEL ANGEL CRUZ MENDOZA	\$39,900.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15218	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FRANCISCO JAVIER C NAVA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15219	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MANUEL CRUZ ANGELES	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15220	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MARCO ANTONIO PENALOZA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15221	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MARIO ERNESTO CRUZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15222	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ROBERTO SOUZA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15223	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ROGER JOSE MORALES PINEDA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15224	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SALVADOR GALVEZ BRAVO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15226	81	PROP 1B TRUCK REPLACEMENT PROGRAM	TRANSCORDOVA, INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15227	81	PROP 1B TRUCK REPLACEMENT PROGRAM	WILFREDO EDUARDO RODAS	\$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15229	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FRANK JACKSON	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15230	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FELIPE CANO	\$40,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15231	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LUIS SALCEDA	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15232	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FENCE SPECIALTIES, INC.	\$25,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15233	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FIRST LANE LOGISTICS TRANSPORTATION	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15235	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FOREST WOOD FIBER PRODUCTS INC	\$150,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15236	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LUIS SANTACRUZ	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15237	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LUIS A. NEGRETE	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15238	81	PROP 1B TRUCK REPLACEMENT PROGRAM	KENNTH CELLUZZI	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15239	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MELVIN O. LOPEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15240	81	PROP 1B TRUCK REPLACEMENT PROGRAM	KUMAR AMANDEEP	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15241	81	PROP 1B TRUCK REPLACEMENT PROGRAM	L BROTHERS AND SONS INC	\$49,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15242	81	PROP 1B TRUCK REPLACEMENT PROGRAM	EDWARD R. LATOURETTE	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15243	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CARLOS M. LANDAVERDE	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15244	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MARNITIA MARTIN	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15245	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LL TRUCKING CO. LLC	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15246	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RUBEN LOPEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15247	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LUIS FERNANDO ARCHILA SAZO	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15248	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LASER STAR ENTERPRISES INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15249	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LEONARDO G LOPEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15253	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MANUEL CAMACHO	\$40,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15254	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MARTIAN TRUCKING, INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15255	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ISMAEL PEREZ IRIBE	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15256	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MICHAEL THOMPSON	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15258	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ARMANDO AMADOR	\$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15260	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MARCO ANTONIO SOTO	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15261	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MARIO A. PORTILLO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15262	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MASC TRUCKING INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15263	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MELENDEZ FAMILY LIMITED PARTNERSHIP	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15264	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MELGOZA TRUCKING INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15265	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MG INDEPENDENT DISTRIBUTOR INC.	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15266	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SERAFIN MIRANDA	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15267	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JORGE H REYNAGA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15269	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MANUEL MENA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15272	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PEDRO MIRANDA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15273	81	PROP 1B TRUCK REPLACEMENT PROGRAM	NABIH J. ESMEIRAT	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15274	81	PROP 1B TRUCK REPLACEMENT PROGRAM	NATIONAL PAVING COMPANY, INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15275	81	PROP 1B TRUCK REPLACEMENT PROGRAM	NERY OSMAN ORELLANA	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15277	81	PROP 1B TRUCK REPLACEMENT PROGRAM	OTY INC.	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15278	81	PROP 1B TRUCK REPLACEMENT PROGRAM	OSWALDO A FLORES	\$40,000.00	



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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15280	81	PROP 1B TRUCK REPLACEMENT PROGRAM	OSCAR BLANCO ORTIZ	\$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15281	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DANIEL ORELLANA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15284	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PADWORKS INC.	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15285	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PALM SPRINGS RECYLING CENTER, INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15286	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PASCUAL CHAVEZ RAMIREZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15287	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PEGASSO TRUCKING INC	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15288	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PEDRO MAURICIO GONZALEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15289	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DOUG OWENS	\$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15291	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PINE TREE LUMBER CO., LP	\$85,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15292	81	PROP 1B TRUCK REPLACEMENT PROGRAM	EFRAIN ESQUER	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15295	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RAYNARD FOSTER	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15296	81	PROP 1B TRUCK REPLACEMENT PROGRAM	REYNALDO CARRION	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15298	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RJB TRANSPORT, INC.	\$47,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15299	81	PROP 1B TRUCK REPLACEMENT PROGRAM	R L TRANSPORTATION SERVICES, INC.	\$38,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15300	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FRESH LINK LOGISTICS LLC	\$175,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15301	81	PROP 1B TRUCK REPLACEMENT PROGRAM	TED'S MEATS INC.	\$25,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15302	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RODOLFO AGUILERA	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15303	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RUBEN RANGEL	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15305	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RRM PROPERTIES, LTD	\$550,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15306	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ISMAEL SALDIVAR	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15308	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SEGILFREDO PAEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15309	81	PROP 1B TRUCK REPLACEMENT PROGRAM	OSCAR SILVA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15310	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SOCAL BIOFUEL INC.	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15315	81	PROP 1B TRUCK REPLACEMENT PROGRAM	TRUSPRO STRUCTURAL COMPONENTS, INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15316	81	PROP 1B TRUCK REPLACEMENT PROGRAM	WCL TRUCKING CORP.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15318	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JESUS RAMON AMAYA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15319	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JERAMY T. PEREZ	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15320	81	PROP 1B TRUCK REPLACEMENT PROGRAM	NARINDER SINGH	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15321	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JAGPAL S. JHATTU	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15322	81	PROP 1B TRUCK REPLACEMENT PROGRAM	T.F. TRUCKING, INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15323	81	PROP 1B TRUCK REPLACEMENT PROGRAM	TED LEVINE DRUM CO.	\$145,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15324	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DANIEL TREVINO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15325	81	PROP 1B TRUCK REPLACEMENT PROGRAM	TRIMMING LAND CO. INC.	\$170,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15326	81	PROP 1B TRUCK REPLACEMENT PROGRAM	UNITED PARCEL SERVICE, INC	\$2,575,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15327	81	PROP 1B TRUCK REPLACEMENT PROGRAM	T.A.H. TRUCKING INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15328	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DOMICIANO VALDEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15329	81	PROP 1B TRUCK REPLACEMENT PROGRAM	OMAR VILLASENOR	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15330	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MARCOS VELASCO	\$50,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15331	81	PROP 1B TRUCK REPLACEMENT PROGRAM	VICENTE ARROYO	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15332	81	PROP 1B TRUCK REPLACEMENT PROGRAM	VICENTE GONZALEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15333	81	PROP 1B TRUCK REPLACEMENT PROGRAM	VICENTE J. JIMENEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15334	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RENE C. VILLA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15335	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE ALFREDO VILLALOBOS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15336	81	PROP 1B TRUCK REPLACEMENT PROGRAM	VARUSH MELIKIAN	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15338	81	PROP 1B TRUCK REPLACEMENT PROGRAM	WALTER J. PEREZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15339	81	PROP 1B TRUCK REPLACEMENT PROGRAM	IVAN YURTAEV	\$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15340	81	PROP 1B TRUCK REPLACEMENT PROGRAM	WINEGARDNER MASONRY, INC.	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15344	31	TECHNICAL ASSISTANCE WITH ALTERNATIVE FUELS, ELECTRIC VEHICLES, CHARGING AND FUEL INFRASTRUCTURE	CLEAN FUEL CONNECTION INC	\$60,000.00	
03	MEDIA OFFICE	C15345	36	MEDIA, ADVERTISING AND OUTREACH CAMPAIGN FOR "CHECK BEFORE YOU BURN" PROGRAM	QUIJOTE CORP dba SENSIS	\$493,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15348	81	PROP 1B TRUCK REPLACEMENT PROGRAM	VICENTE VILLEGAS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15349	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE ROSALES	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15350	81	PROP 1B TRUCK REPLACEMENT PROGRAM	HARRY BELLINGER	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15351	81	PROP 1B TRUCK REPLACEMENT PROGRAM	KG TRUCKING INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15352	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FAUSTINO ANDRADE	\$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15354	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DIAMOND MATTRESS COMPANY INC.	\$100,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15355	81	PROP 1B TRUCK REPLACEMENT PROGRAM	COMMERCIAL ROCK	\$140,000.00	
16	ADMINISTRATIVE & HUMAN RESOURCES	C15356	01	INSURANCE BROKERAGE SERVICES FOR TERM OF 10/1/14/ THROUGH 9/30/15	ALLIANT INSURANCE SERVICES INC	\$147,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15359	81	PROP 1B TRUCK REPLACEMENT PROGRAM	THINH NGUYEN	\$11,870.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15364	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ARMANDO AMADOR	\$20,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15365	81	PROP 1B TRUCK REPOWER PROGRAM	JORGE DORADO ESTELLES	\$20,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15369	31	TECHNICAL ASSISTANCE WITH LOW- AND ZERO EMISSION VEHICLES, FUEL CELLS, STATIONARY APPLICATIONS AND EMISSIONS ANALYSES	BREAKTHROUGH TECHNOLOGIES INSTITUTE INC	\$30,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15370	81	PROP 1B TRUCK REPLACEMENT PROGRAM	EFRAIN HERNANDEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15371	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LBJ & ASSOCIATES, INC.	\$85,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15372	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MERCADO LATINO, INC.	\$525,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15373	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MR. G TRUCKING INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15374	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SPATES FABRICATORS INC.	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15375	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FENCECORP, INC.	\$225,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15376	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FENCE WORKS INC.	\$200,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15377	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LADISLAO CIBRIAN	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15378	81	PROP 1B TRUCK REPLACEMENT PROGRAM	G.O. RODRIGUEZ TRUCKING, INC.	\$200,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15379	81	PROP 1B TRUCK REPLACEMENT PROGRAM	AIM TRANSPORTATION, INC.	\$365,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15380	31	TECHNICAL ASSISTANCE WITH GOODS MOVEMENT, ALTERNATIVE FUELS, AND ZERO-EMISSION TRANSPORTATION TECHNOLOGIES	ICF RESOURCES, LLC	\$30,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15383	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CR&R INCORPORATED	\$1,200,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15384	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MATERIALS TRANSPORT SERVICES	\$85,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15385	32	REPLACEMENT OF 9 OFF-ROAD VEHICLES	A-G SOD FARMS, INC.	\$339,335.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15386	32	REPLACE 2 OFF-ROAD DIESEL VEHICLES	WHITTIER FERTILIZER CO.	\$392,593.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15392	81	PROP 1B TRUCK REPLACEMENT PROGRAM	L.A. TRUCKING, INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15393	81	PROP 1B TRUCK REPLACEMENT PROGRAM	NIGHT TRAIN TRANSPORT INC.	\$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15394	81	PROP 1B TRUCK REPLACEMENT PROGRAM	GREGORIO ROMERO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15395	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LUIS RIGOBERTO PECH	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15396	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MARIBEL ALEJANDRA LEDESMA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15397	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ABUNDIO FUENTES HERRERA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15398	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MARCO VILLASENOR	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15399	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE CASTRO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15400	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOSE ELISEO SORIANO	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15401	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MIGUEL A. GONZALES	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15402	81	PROP 1B TRUCK REPLACEMENT PROGRAM	R.W. ZANT CO.	\$285,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15403	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SHAMROCK GROUP INC	\$135,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15404	81	PROP 1B TRUCK REPLACEMENT PROGRAM	VICTOR M MOLINA PEREZ	\$40,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15405	81	PROP 1B TRUCK REPLACEMENT PROGRAM	NORBERT OTZOY	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15407	81	PROP 1B TRUCK REPLACEMENT PROGRAM	TWO STAR TRUCKING	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15408	81	PROP 1B TRUCK REPLACEMENT PROGRAM	WILLIAM O. BAIREZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15409	81	PROP 1B TRUCK REPLACEMENT PROGRAM	BENJAMIN GARCIA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15410	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ESTEBAN GOMEZ	\$80,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15411	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ERIK REYES GIRON	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15412	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MICHAEL ANDREW LOPEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15413	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RUBEN PEREZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15414	81	PROP 1B TRUCK REPLACEMENT PROGRAM	NERY N SALGUERO	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15415	31	TECHNICAL ASSISTANCE WITH ALTERNATIVE FUELS AND FUELING INFRASTRUCTURE, EMISSIONS ANALYSIS AND ON-ROAD SOURCES	GLADSTEIN, NEANDROSS & ASSOCIATES	\$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15416	81	PROP 1B TRUCK REPLACEMENT PROGRAM	G.O.L. TRUCKING	\$49,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15417	81	PROP 1B TRUCK REPLACEMENT PROGRAM	J&J TRANSPORTATION VINSON, INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15421	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SEBASTIAN WATERWORKS, INC.	\$25,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15422	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JOEL GONZALEZ AND YVONNE GONZALEZ	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15423	81	PROP 1B TRUCK REPLACEMENT PROGRAM	OMEGA PAVING, INC.	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15424	81	PROP 1B TRUCK REPLACEMENT PROGRAM	GABRIEL PINTOR	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15426	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JUANA GONZALEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15427	81	PROP 1B TRUCK REPLACEMENT PROGRAM	AISHU INC.	\$35,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15428	81	PROP 1B TRUCK REPLACEMENT PROGRAM	C & K TRUCKING LLC	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15429	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CECILA ISABEL FLORES	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15430	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MANUEL DE JESUS MARTINEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15431	81	PROP 1B TRUCK REPLACEMENT PROGRAM	VICENTE MORAN	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15432	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MIGUEL A. GRANADOS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15433	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LUIS BENITEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15434	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RICK AND DORTHEA TAYLOR	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15435	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MICHAEL SCOVELL	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15436	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ROMAN COVARRUBIAS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15437	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RAUL JIMENEZ	\$40,000.00	
27	INFORMATION MANAGEMENT	C15446	01	SHORT- AND LONG-TERM SYSTEMS DEVELOPMENT, MAINTENANCE AND SUPPORT SERVICES	SIERRA CYBERNETICS INC	\$192,500.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15449	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FAUSTINO ANDRADE JR.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15450	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LEINCO ENTERPRISES, INC.	\$250,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15452	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DAVE HILCHEY	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15453	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JIM FOLEY	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15454	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ELI'S TRANSPORTATION, INC.	\$50,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15455	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SOUTH COAST TRANSPORTATION & DIST. INC.	\$35,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15456	81	PROP 1B TRUCK REPLACEMENT PROGRAM	TEODULO HERNANDEZ	\$40,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15463	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ROBERTO RODRIGUEZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15464	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FREDY A SANTOS	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15469	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FAUSTINO S. RAMIREZ	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15473	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CR&R INCORPORATED	\$700,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15487	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SACER ENTERPRISES LLC	\$25,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15488	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MARIO ALDANA	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15489	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ALAMEDA CONSTRUCTION SERVICES INC.	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G14476	80	REPLACE UP TO 5 CNG TANKS IN SCHOOL BUSES	PUPIL TRANSPORTATION COOPERATIVE	\$100,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G14477	80	REPLACE UP TO 3 CNG TANKS ON SCHOOL BUSES	ONTARIO-MONTCLAIR SCHOOL DISTRICT	\$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G14488	80	REPLACE CNG TANKS ON UP TO 13 SCHOOL BUSES	MONTEBELLO UNIFIED SCHOOL DISTRICT	\$260,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G14511	80	RETROFIT 13 DIESEL SCHOOL BUSES WITH THERMACAT DPF	CHAFFEY JOINT UNION HIGH SCHOOL DISTRICT	\$260,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G15134	80	REPLACE 6 CNG TANKS ON SCHOOL BUSES	PUPIL TRANSPORTATION COOPERATIVE	\$120,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G15312	80	REPLACE 1 CNG TANK ON 1 SCHOOL BUS	MOUNTAIN VIEW SCHOOL DISTRICT	\$20,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	G15313	80	REPLACE 3 CNG TANKS ON 3 SCHOOL BUSES	MONTEBELLO UNIFIED SCHOOL DISTRICT	\$60,000.00	
44	MSRC	ML06071	23	PURCHASE 3 CNG VEHICLES AND INSTALL A CNG FUELING STATION	CITY OF SANTA MONICA	\$149,925.00	
44	MSRC	ML09047	23	MODIFY VEHICLE MAINTENANCE FACILITY	COUNTY OF LOS ANGELES	\$400,000.00	
44	MSRC	ML11024	23	PURCHASE 3 HEAVY-DUTY CNG VEHICLES	COUNTY OF LOS ANGELES	\$90,000.00	
44	MSRC	ML12049	23	ELECTRIC VEHICLE CHARGING INFRASTRUCTURE	CITY OF RIALTO	\$30,432.00	
44	MSRC	ML14010	23	STREET SWEEPING OPERATIONS	CITY OF CATHEDRAL CITY	\$25,000.00	



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44	MSRC	ML14011	23	IMPLEMENT PALM SPRINGS BICYCLE PROJECTS	CITY OF PALM SPRINGS	\$79,000.00	
44	MSRC	ML14014	23	INSTALL EV CHARGING STATIONS	CITY OF TORRANCE	\$56,000.00	
44	MSRC	ML14019	23	INSTALL EV CHARGING AND BICYCLE INFRASTRUCTURE	CITY OF CORONA	\$178,263.00	
44	MSRC	ML14020	23	SAN GABRIEL BIKE TRAIL UNDERPASS IMPROVEMENTS	COUNTY OF LOS ANGELES	\$150,000.00	
44	MSRC	ML14021	23	INSTALL A CLASS 1 BIKEWAY	COUNTY OF RIVERSIDE	\$250,000.00	
44	MSRC	ML14028	23	EXPAND CNG STATION	CITY OF FULLERTON	\$126,950.00	
44	MSRC	ML14029	23	SAN DIEGO CREEK BIKEWAY IMPROVEMENTS	CITY OF IRVINE	\$90,500.00	
44	MSRC	ML14031	23	PURCHASE 3 HEAVY-DUTY NATURAL GAS VEHICLES	COUNTY OF RIVERSIDE	\$90,000.00	
44	MSRC	ML14033	23	PURCHASE 2 HEAVY-DUTY CNG VEHICLES	CITY OF IRVINE	\$60,000.00	
44	MSRC	ML14034	23	INSTALL EV CHARGING STATIONS	CITY OF LAKE ELSINORE	\$56,700.00	
44	MSRC	ML14049	23	PURCHASE VEHICLE, INSTALL EV CHARGING & BIKE INFRASTRUCTURE	CITY OF MORENO VALLEY	\$105,000.00	
44	MSRC	ML14050	23	YUCAIPA BICYCLE LANES	CITY OF YUCAIPA	\$84,795.00	
44	MSRC	ML14051	23	INSTALL ONE MILE SEGMENT OF CLASS I BIKEWAY COMPLETING THE LARGER "THE TRACKS AT BREA" BICYCLE TRAIL	CITY OF BREA	\$450,000.00	
44	MSRC	ML14054	23	UPGRADE MAINTENANCE FACILITY	CITY OF TORRANCE	\$350,000.00	
44	MSRC	ML14055	23	HIGHLAND BICYCLE PROJECTS	CITY OF HIGHLAND	\$500,000.00	
44	MSRC	ML14056	23	INSTALL 15.9 MILES OF CLASS II BICYCLE LANE IMPROVEMENTS	CITY OF REDLANDS	\$125,000.00	
44	MSRC	ML14064	23	PURCHASE 2 HEAVY-DUTY VEHICLES	CITY OF CLAREMONT	\$60,000.00	
44	MSRC	ML14065	23	INSTALL EV CHARGING STATIONS	CITY OF ORANGE	\$10,000.00	
44	MSRC	ML14066	23	INSTALL SEGMENT OF SOUTH PASADENA BIKEWAY	CITY OF SOUTH PASADENA	\$142,096.00	
44	MSRC	ML14068	23	INSTALL EV CHARGING STATION(S)	CITY OF SOUTH PASADENA	\$10,183.00	
44	MSRC	ML14072	23	PURCHASE 3 CNG VEHICLES, INSTALL 4 EV CHARGING STATIONS AND INSTALL 20 BIKE RACKS	CITY OF CATHEDRAL CITY	\$136,000.00	
44	MSRC	MS14008	23	IMPLEMENT EXPRESS BUS SERVICE TO ORANGE COUNTY FAIR	ORANGE CO TRANSPORTATION AUTHORITY	\$601,187.00	

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44	MSRC	MS14046	23	EXPAND PUBLIC ACCESS CNG STATION IN ONTARIO	ONTARIO CNG STATION INC.	\$150,000.00	
44	MSRC	MS14052	23	EXPAND CNG FUELING STATION	ARCADIA UNIFIED SCHOOL DISTRICT	\$78,000.00	
44	MSRC	MS14057	23	SIGNAL SYNCHRONIZATION PROGRAM	LOS ANGELES COUNTY METROPOLITAN	\$1,250,000.00	
44	MSRC	MS14059	23	SIGNAL SYNCHRONIZATION PARTNERSHIP PROGRAM	RIVERSIDE COUNTY TRANSPORTATION COMM	\$1,250,000.00	
<b>Subtotal</b>						<b>\$100,574,615.00</b>	

**Competitive-Executive Officer Approved**

16	ADMINISTRATIVE & HUMAN RESOURCES	C15025	01	MEDICAL SERVICE PROVIDER	KAISER FOUNDATION HEALTH PLAN	\$15,000.00	
<b>Subtotal</b>						<b>\$15,000.00</b>	

**Sole Source - Board Approved**

44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14204	31	SOCALV INFRASTRUCTURE MOA	ASSOCIATED OF LOS ANGELES	\$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14207	31	SOCALV INFRASTRUCTURE MOA	CITY OF PALMDALE	\$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14208	31	SOCALV INFRASTRUCTURE MOA	CITY OF LAKE ELSINORE	\$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14210	31	SOCALV INFRASTRUCTURE MOA	CALIFORNIA STATE UNIVERSITY-LONG BEACH	\$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14256	31	DEVELOP AND DEMONSTRATE V2G TECHNOLOGY	NATIONAL STRATEGIES, LLC	\$250,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14311	31	INSTALL CNG FUELING STATION IN MURRIETA	SOUTHERN CALIFORNIA GAS COMPANY	\$217,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14375	61	DATA COLLECTION & ANALYSIS OF ZERO-EMISSION CARGO TRANSPORTATION DEMONSTRATION	NATIONAL RENEWABLE ENERGY LAB	\$200,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15020	31	DEVELOP SAMPLING AND TESTING PROTOCOLS FOR ANALYZING IMPURITIES IN HYDROGEN	UNIVERSITY OF CALIFORNIA - IRVINE	\$114,500.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15021	31,17	ELECTRIC YARD TRUCK UPGRADE AND DEMONSTRATION	TRANSPORTATION POWER, INC.	\$405,000.00	
44	MSRC	MS14058	23	SIGNAL SYNCHRONIZATION PARTNERSHIP PROGRAM	ORANGE CO TRANSPORTATION AUTHORITY	\$1,250,000.00	
<b>Subtotal</b>						<b>\$2,436,500.00</b>	

**Sole Source - Executive Officer Approved**

16	ADMINISTRATIVE & HUMAN RESOURCES	C14216	01	HR WEB-BASED SOFTWARE	GOVERNMENTJOBS.COM INC	\$21,900.00	
27	INFORMATION MANAGEMENT	C14324	01	WEB SUPPORT SERVICES	CIVIC RESOURCE GROUP LLC	\$10,000.00	
08	LEGAL	C14360	01	OFFICE OF GENERAL COUNSEL DOCUMENT MANAGEMENT SYSTEM	HARBOR LITIGATION SOLUTIONS	\$35,000.00	
08	LEGAL	C14680	01	LEGAL CONSULTATION RELATING TO 2012 AQMP CONTROL MEASURE IND-01	DAVID NAWI ENVIRONMENTAL MEDIATION	\$75,000.00	
08	LEGAL	C14682	01	ELECTRONIC LEGAL SERVICES/LAW LIBRARY SERVICES - "LEGALEDCENTER" DATABASES	THOMSON REUTERS - WEST PYMT CTR	\$75,000.00	
08	LEGAL	C14683	01	ELECTRONIC LEGAL SERVICES/LAW LIBRARY SERVICES - "CLEAR" DATABASE	THOMSON REUTERS - WEST PYMT CTR	\$1,600.00	
27	INFORMATION MANAGEMENT	C15023	01	MASS EMAIL OPTIMIZATION	GENESIS 1 CONSULTING GROUP	\$40,000.00	
20	MEDIA OFFICE	C15027	01	YOUTH SPORTS AND HEALTHY CHOICES VIDEO PRODUCTION	GROUP 1 PRODUCTIONS	\$40,000.00	
50	ENGINEERING AND COMPLIANCE	C15279	01	EXIDE MITIGATION PLAN FOR CONSTRUCTION OF RISK REDUCTION MEASURES	TETRA TECH BAS	\$75,000.00	
26	PLANNING RULE DEV & AREA SOURCES	C15341	01	PROVIDE CEQA SUPPORT FOR TESORO REFINERY INTEGRATION PROJECT	CAL ENVIRO METRICS, LLC	\$50,400.00	

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26	PLANNING RULE DEV & AREA SOURCES	C15342	01	EVALUATION OF NOx EMISSION CONTROL TECHNOLOGIES FOR STATIONARY SOURCES LOCATED AT REFINERIES IN THE SCAQMD'S RECLAIM PROGRAM	NORTON ENGINEERING CONSULTANTS, INC	\$75,000.00	
26	PLANNING RULE DEV & AREA SOURCES	C15343	01	EVALUATION OF NOx EMISSION CONTROL TECHNOLOGIES FOR STATIONARY SOURCES LOCATED AT NON-REFINERIES IN THE SCAQMD'S RECLAIM PROGRAM	ETS INC	\$50,000.00	
08	LEGAL	C15439	01	LEGAL COUNSEL AND ADVICE	SCHEPER KIM & HARRIS LLP	\$20,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C15445	01	REV. DR. MARTIN LUTHER KING, JR. DAY OF SERVICE FORUM	SNAP PRODUCTIONS	\$11,000.00	
20	MEDIA OFFICE	C15457	01	MEDIA, ADVERTISING, AND PUBLIC OUTREACH CAMPAIGN FOR CHECK BEFORE YOU BURN PROGRAM	ALPUNTO ADVERTISING, INC.	\$68,000.00	
08	LEGAL	C15485	01	OUTSIDE COUNSEL - CONFLICT OF INTEREST	OLSON, HAGEL & FISHBURN LLP	\$35,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C15512	01	ENVIRONMENTAL JUSTICE CONFERENCE KEYNOTE SPEAKER SERVICES	JODI F. SOLOMON SPEAKERS BUREAU INC	\$7,500.00	
<b>Subtotal</b>						<b>\$690,400.00</b>	

**II. OTHER**

**Board Assistant**

**Board Administrative Committee Reviewed/Executive Officer Approved**

02	GOVERNING BOARD	C15000	01	BOARD ASSISTANT SERVICES FOR DENNIS YATES	ROBERT ULLOA	\$56,560.00	16
02	GOVERNING BOARD	C15001	01	BOARD ASSISTANT SERVICES FOR DENNIS YATES	EARL C ELROD	\$56,560.00	16
02	GOVERNING BOARD	C15002	01	BOARD ASSISTANT SERVICES FOR MIGUEL PULIDO	LUIS A PULIDO	\$37,707.00	16
02	GOVERNING BOARD	C15003	01	BOARD ASSISTANT SERVICES FOR DR. CLARK PARKER	MARIA INIGUEZ	\$37,707.00	16
02	GOVERNING BOARD	C15004	01	BOARD ASSISTANT SERVICES FOR SHAWN NELSON	INFRASTRUCTURE GROUP, INC	\$37,707.00	16

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DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
02	GOVERNING BOARD	C15005	01	BOARD ASSISTANT SERVICES FOR JUDITH MITCHELL	MARISA KRISTINE PEREZ	\$56,560.50	16
02	GOVERNING BOARD	C15006	01	BOARD ASSISTANT SERVICES FOR JUDITH MITCHELL	CHUNG S. LIU	\$18,853.50	16
02	GOVERNING BOARD	C15007	01	BOARD ASSISTANT SERVICES FOR DR. JOSEPH LYOU	NICOLE NISHIMURA	\$7,707.00	16
02	GOVERNING BOARD	C15008	01	BOARD ASSISTANT SERVICES FOR DR. JOSEPH LYOU	MARK ABRAMOWITZ	\$30,000.00	16
02	GOVERNING BOARD	C15009	01	BOARD ASSISTANT SERVICES FOR JOSIE GONZALES	COUNTY OF SAN BERNARDINO	\$37,707.00	16
02	GOVERNING BOARD	C15010	01	BOARD ASSISTANT SERVICES FOR MICHAEL CACCIOTTI	SHO TAY	\$3,947.40	16
02	GOVERNING BOARD	C15011	01	BOARD ASSISTANT SERVICES FOR MICHAEL CACCIOTTI	RONALD KETCHAM	\$11,000.00	16
02	GOVERNING BOARD	C15012	01	BOARD ASSISTANT SERVICES FOR MICHAEL CACCIOTTI	WILLIAM GLAZIER	\$6,657.00	16
02	GOVERNING BOARD	C15013	01	BOARD ASSISTANT SERVICES FOR MICHAEL CACCIOTTI	JAMES GLEN DUNCAN	\$8,400.00	16
02	GOVERNING BOARD	C15014	01	BOARD ASSISTANT SERVICES FOR MICHAEL CACCIOTTI	FRANK CARDENAS AND ASSOCIATES	\$7,700.00	16
02	GOVERNING BOARD	C15015	01	BOARD ASSISTANT SERVICES FOR JOE BUSCAINO	JACOB LEE HAIK	\$37,707.00	16
02	GOVERNING BOARD	C15016	01	BOARD ASSISTANT SERVICES FOR JOHN BENOIT	BUFORD A CRITES	\$37,707.00	16
02	GOVERNING BOARD	C15017	01	BOARD ASSISTANT SERVICES FOR BEN BENOIT	WESTERN RIVERSIDE COUNCIL OF GOVERNMENTS	\$37,707.00	16
02	GOVERNING BOARD	C15018	01	BOARD ASSISTANT SERVICES FOR MICHAEL ANTONOVICH	DEBRA S MENDELSON	\$37,707.00	16
02	GOVERNING BOARD	C15019	01	BOARD ASSISTANT SERVICES FOR DR. WILLIAM BURKE	P & L CONSULTING, LLC	\$113,121.00	16
<b>Subtotal</b>						<b>\$678,722.40</b>	

Other - Executive Officer Approved

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15366	31	LICENSE AGREEMENT FOR HYDROGEN FUELING STATION INSTALLATION, OPERATION AND MAINTENANCE AT SCAQMD HEADQUARTERS	ENGINEERING, PROCUREMENT & CONSTRUCTION	\$0.00	1
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15419	31	HYDROGEN DISPENSER TRANSFER AGREEMENT	SUNLINE TRANSIT AGENCY	\$0.00	1
<b>Subtotal</b>						<b>\$0.00</b>	

**III. SPONSORSHIPS**

**Sponsorship -Executive Officer Approved**

44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14622	01	CO-SPONSOR CSULB CEERS STUDENT EDUCATIONAL PROJECT 2014	CALIFORNIA STATE UNIVERSITY-LONG BEACH	\$28,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C15145	01	2014 BLACK CHAMBER ANNUAL BANQUET	BLACK CHAMBER OF COMMERCE-ORANGE CO	\$500.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C15146	01	INLAND EMPIRE 2014 RIDESHARE WEEK SPONSORSHIP	RIVERSIDE COUNTY TRANSPORTATION COMM	\$1,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C15147	01	HEALTHY FONTANA PROGRAM	CITY OF FONTANA	\$1,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C15367	01	SPONSORSHIP OF THE RIALTO FAMILY FESTIVAL	CITY OF RIALTO	\$500.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C15368	01	COSPONSOR 9TH ANNUAL TASTE OF SOUL 2014 FAMILY FESTIVAL	LOS ANGELES SENTINEL, INC	\$25,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C15381	01	LUNG FORCE WALKS AND EXPO	AMERICAN LUNG ASSOCIATION	\$10,000.00	
<b>Subtotal</b>						<b>\$66,000.00</b>	

**IV. MODIFICATIONS**

**Board Approved**

08	LEGAL	C10060	01	PROVIDE EMPLOYEE LITIGATION SERVICES	WILEY PRICE & RADULOVICH	\$75,000.00	
08	LEGAL	C11594	01	LEGAL REPRESENTATION	PERKINS COIE LLP	\$25,000.00	
08	LEGAL	C12075	01	ENVIRONMENTAL LAW	WOODRUFF SPRADLIN & SMART	\$50,000.00	

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12308	40	PERFORM WEBSITE SERVICES FOR THE CNGVP	GLADSTEIN, NEANDROSS & ASSOCIATES	\$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12851	31	CONSTRUCT TWO NEW CNG FUELING STATIONS	CLEAN ENERGY	\$1,000,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13055	17	INSTALL AND MAINTAIN AIR FILTRATION SYSTEMS IN SAN BERNARDINO AND BOYLE HEIGHTS SCHOOLS	IQAIR NORTH AMERICA, INC.	\$170,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13259	31	HYDROGEN STATION OPERATION AND MAINTENANCE FOR FIVE CITIES HYDROGEN PROGRAM	AIR PRODUCTS & CHEMICALS INC	\$90,000.00	
35	LEGISLATIVE & PUBLIC AFFAIRS	C13263	01	WASHINGTON DC LEGISLATIVE REPRESENTATION	CARMEN GROUP, INC	\$109,620.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14136	32	REPOWER 4 OFF-ROAD VEHICLES	NORTH COUNTY SAND & GRAVEL, INC.	\$186,265.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14154	01	UPGRADE METEOROLOGICAL SYSTEMS AND DATA COMMUNICATIONS	TECHNICAL AND BUSINESS SYSTEMS	\$20,000.00	
08	LEGAL	C14191	01	PROVIDE LEGAL SERVICES CONCERNING EXIDE BANKRUPTCY PROCEEDINGS	KLEE, TUCHIN. BOGDANOFF & STERN LLP	\$25,000.00	
08	LEGAL	C14191	01	PROVIDE LEGAL SERVICES CONCERNING EXIDE BANKRUPTCY PROCEEDINGS	KLEE, TUCHIN. BOGDANOFF & STERN LLP	\$75,000.00	
08	LEGAL	C14191	01	PROVIDE LEGAL SERVICES CONCERNING EXIDE BANKRUPTCY PROCEEDINGS	KLEE, TUCHIN. BOGDANOFF & STERN LLP	\$25,000.00	
08	LEGAL	C14198	01	COUNSEL RAILROAD LITIGATION	SLOVER & LOFTUS	\$50,000.00	
08	LEGAL	C14198	01	COUNSEL RAILROAD LITIGATION	SLOVER & LOFTUS	\$25,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14535	58	TECHNICAL ASSISTANCE, IMPLEMENTATION & OUTREACH SUPPORT FOR CARL MOYER PROGRAM	CLEAN FUEL CONNECTION INC	\$50,000.00	
44	MSRC	MS14009	23	BUY-DOWN THE COST OF ALTERNATIVE FUEL SCHOOL BUSES	A-Z BUS SALES, INC.	\$93,000.00	
44	MSRC	MS14009	23	BUY-DOWN THE COST OF ALTERNATIVE FUEL SCHOOL BUSES	A-Z BUS SALES, INC.	\$90,000.00	
44	MSRC	MS14048	23	BUY DOWN THE COST OF ALTERNATIVE FUELED SCHOOL BUSES	BUSWEST, LLC	\$434,000.00	

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						<b>Subtotal</b>	<b>\$2,652,885.00</b>
<b>Executive Officer Approved</b>							
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C00013	01	COSTA MESA AIR MONITORING STATION LEASE	EL PACIFIC PROPERTIES/DONALD S ELLIS	\$0.00	2
11	LEGAL	C01096	01	OUTSIDE COUNSEL - CONFLICT OF INTEREST	OLSON, HAGEL & FISHBURN LLP	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C07062	31	TECHNICAL ASSISTANCE RELATED TO AIR QUALITY IMPACTS OF REGIONAL GOODS MOVEMENT	THE TIOGA GROUP	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C09142	32	REPOWER TWO DIESEL WATERPULLS	PROWATER INC.	\$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C09364	31	CONSTRUCT/INSTALL CNG REFUELING STATION AND PERFORM GARAGE UPGRADES	RIM OF THE WORLD UNIFIED SCHOOL DISTRICT	\$0.00	6
26	PLANNING RULE DEV & AREA SOURCES	C10001	01	STAMPFRAG MEMBER SERVICES	CENTER FOR CONTINUING STUDY- CA ECONOMY	\$5,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C10046	31	DEVELOPMENT AND DEMONSTRATION OF RENEWABLE HYDROGEN ENERGY AND FUELING STATION	AIR PRODUCTS & CHEMICALS INC	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C10079	32	REPOWER ONE SINGLE ENGINE SCRAPER	ANDREW J. ALVA	\$0.00	6
16	ADMINISTRATIVE & HUMAN RESOURCES	C10178	01	NORCO AIR MONITORING STATION LEASE	DEPARTMENT OF THE NAVY	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C10722	01	RE-ESTABLISH TESTING FACILITY & QUANTIFY PM EMISSION REDUCTIONS FROM CHARBROILING OPERATIONS	UNIVERSITY OF CALIFORNIA, RIVERSIDE	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C11204	31	ELECTRIC CONVERSION OF FLEET VEHICLES	AC PROPULSION INC	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C11398	81	PROP 1B GOODS MOVEMENT - LOCOMOTIVE CONTRACT	BNSF RAILWAY COMPANY	\$0.00	11
26	PLANNING RULE DEV & AREA SOURCES	C11527	31	SOURCES, COMPOSITION, VARIABILITY & TOXICOLOGICAL CHARACTERISTICS OF ULTRAFINE PARTICLES IN SOUTHERN CALIFORNIA STUDY	UNIVERSITY OF SOUTHERN CALIFORNIA	\$0.00	11



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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C11549	81	PROP 1B TRUCK REPLACEMENT PROGRAM LEASE TO OWN PROGRAM	CITY NATIONAL BANK	\$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C11550	01	PROP 1B LEASE TO OWN ADMINISTRATOR	CALIFORNIA CARTAGE CO, LLC	\$0.00	11
16	ADMINISTRATIVE & HUMAN RESOURCES	C11593	01	EMPLOYEE ASSISTANCE PROGRAM	MANAGED HEALTH NETWORK	\$27,706.00	
08	LEGAL	C11594	01	LEGAL REPRESENTATION	PERKINS COIE LLP	\$10,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C11608	44	DEMONSTRATION OF REMOTE SENSING FENCELINE MONITORING METHODS AT OIL REFINERIES AND PORTS	UNIVERSITY OF CALIFORNIA-LOS ANGELES	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C11615	31	DEVELOPMENT AND DEMONSTRATION OF UP TO 4 HEAVY-DUTY HYDRAULIC HYBRID VEHICLES	PARKER HANNIFIN CORPORATION	\$0.00	6
35	LEGISLATIVE & PUBLIC AFFAIRS	C11738	01	IMPLEMENTATION OF THE AIR QUALITY INSTITUTE (AQI)	CORDOBA CORPORATION	\$0.00	6
08	LEGAL	C12075	01	ENVIRONMENTAL LAW	WOODRUFF SPRADLIN & SMART	\$0.00	6
27	INFORMATION MANAGEMENT	C12151	01	CONTRACT FOR SYSTEMS DEVELOPMENT, MAINTENANCE AND SUPPORT SERVICES	SIERRA CYBERNETICS INC	\$0.00	6
27	INFORMATION MANAGEMENT	C12157	01	SHORT AND LONG-TERM SYSTEMS DEVELOPMENT, MAINTENANCE AND SUPPORT SERVICES	PRELUDE SYSTEMS, INC.	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12174	48	CHARACTERIZATION OF THE PHYSICAL, CHEMICAL, AND BIOLOGICAL PROPERTIES OF PM EMISSIONS, VOCS AND CARBONYL GROUPS FROM UNDER-FIRED CHARBROILERS	UNIVERSITY OF CALIFORNIA, RIVERSIDE	\$0.00	6
16	ADMINISTRATIVE & HUMAN RESOURCES	C12189	01	SERVICE AND MAINTENANCE FOR LEIBERT AIR CONDITIONING EQUIPMENT	KLM, INC	\$8,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12204	32	REPOWER OF 13 OFF-ROAD VEHICLES	SHARMA GENERAL ENGINEERING CONTRACTORS	\$0.00	11

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12208	31	DETERMINE THE PHYSICAL AND CHEMICAL COMPOSITION & ASSOCIATED HEALTH EFFECTS OF TAILPIPE PM EMISSIONS	UNIVERSITY OF CALIFORNIA, RIVERSIDE	\$0.00	6
04	FINANCE	C12217	01	PROVIDE INVESTMENT CONSULTING SERVICES	PFM ASSET MANAGEMENT LLC	\$40,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12234	81	INSTALLATION OF A GRID-BASED, SHORE POWER SYSTEMS UP TO TEN BERTHS AT THE PORT OF LOS ANGELES - PROP 1B	CITY OF LOS ANGELES	\$0.00	11
16	ADMINISTRATIVE & HUMAN RESOURCES	C12272	01	PROVIDE ELEVATOR SERVICE AND PREVENTATIVE MAINTENANCE	THYSSENKRUPP ELEVATOR CORP	\$27,954.00	
27	INFORMATION MANAGEMENT	C12285	01	SHORT AND LONG-TERM SYSTEMS DEVELOPMENT, MAINTENANCE AND SUPPORT SERVICES	CMC AMERICAS INC	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12297	58	TECHNICAL ASSISTANCE WITH PROP 1B GOODS MOVEMENT PROGRAM	CLEAN FUEL CONNECTION INC	\$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12376	31	TECHNICAL ASSISTANCE FOR AIR POLLUTION FORMATION AND CONTROL, ADVANCED TRANSPORTATION TECHNOLOGIES AND SYSTEMS, EMISSIONS MEASUREMENTS AND ANALYSIS, ALTERNATIVE FUEL TECHNOLOGIES, SUSTAINABLE ENERGY SYSTEMS, AND OFF-ROAD VEHICLES AND EQUIPMENT	UNIVERSITY OF CALIFORNIA, RIVERSIDE	\$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12381	01	TECHNICAL ASSISTANCE RELATED TO EMISSION INVENTORIES, GOODS MOVEMENT AND OFF-ROAD SOURCES	INTEGRA ENVIRONMENTAL CONSULTING, INC.	\$75,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12452	35	INSTALLATION OF UP TO 2 MW SOLAR PV CARPORT, 28 EV CHARGERS AND DEPLOYMENT OF 28 ELECTRIC VEHICLES	CITY OF INDUSTRY	\$0.00	6
08	LEGAL	C12702	01	LEGAL ADVICE FOR LAWSUITS AND ADMINISTRATIVE PROCEEDINGS	SHUTE MIHALY & WEINBERGER LLP	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12852	31	UPGRADE EXISTING CNG FUELING STATION AT CITY OF CORONA CORPORATE YARD	CITY OF CORONA	\$0.00	1

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<b>DEPT ID</b>	<b>DEPT NAME</b>	<b>CONTRACT NUMBER</b>	<b>FUND CODE</b>	<b>DESCRIPTION</b>	<b>VENDOR NAME</b>	<b>CONTRACT AMOUNT</b>	<b>FOOT NOTE</b>
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12862	61	DEVELOPMENT OF A CLASS 8 PLUG-IN HYBRID HEAVY-DUTY VEHICLE	VOLVO TECHNOLOGY OF AMERICA INC	\$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12888	01	LBUSD AIR MONITORING STATION	LONG BEACH UNIFIED SCHOOL DISTRICT	\$0.00	9
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13024	32	REPOWER ONE (1) DIESEL OFF-ROAD VEHICLE	FST SAND & GRAVEL INC	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13026	32	REPOWER 3 DIESEL OFF-ROAD VEHICLES	LD ANDERSON INC	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13035	36	INSTALL 50 KW SOLAR PV ROOFTOP SYSTEM, WITH 1.5MW BATTERY ENERGY STORAGE	CODA ENERGY, LLC	\$0.00	4
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13041	01	TECHNICAL ASSISTANCE WITH EMISSION REDUCTION PROJECTS TO BE IMPLEMENTED UNDER AB 1318 MITIGATION	MELVIN D ZELDIN	\$0.00	6
16	ADMINISTRATIVE & HUMAN RESOURCES	C13054	01	WEST INLAND EMPIRE EMPLOYMENT RELATIONS CONSORTIUM	LIEBERT CASSIDY WHITMORE	\$3,549.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13058	31	DEVELOPMENT OF MICROTURBINE SERIES HYBRID SYSTEM FOR CLASS 7 HEAVY-DUTY VEHICLE APPLICATION	CAPSTONE TURBINE CORPORATION	\$0.00	6
08	LEGAL	C13060	01	LITIGATION COUNSEL	PAUL HASTINGS LLP	\$60,000.00	
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13169	01	ASSESSMENT OF PERFORMANCE AND OPERATIONAL ISSUES WITH LNG TRUCKS UNDER PROP 1B PROGRAM	GLADSTEIN, NEANDROSS & ASSOCIATES	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13198	31,17	TECHNICAL ASSISTANCE WITH ALTERNATIVE FUELS, EMISSIONS ANALYSIS AND ON-ROAD SOURCES	GLADSTEIN, NEANDROSS & ASSOCIATES	\$0.00	6
08	LEGAL	C13312	01	LEGAL COUNSEL FOR CONFLICTS OF INTEREST/PUBLIC LAW ISSUES	BURKE, WILLIAMS & SORENSEN, LLP	\$0.00	6
35	LEGISLATIVE & PUBLIC AFFAIRS	C13413	01	PUBLIC OPINION SURVEY RESEARCH	GOMEZ RESEARCH	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13418	31	SOCALV INFRASTRUCTURE MOA	CITY OF CLAREMONT	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13420	31	SOCALV INFRASTRUCTURE MOA	UNIVERSITY OF CALIFORNIA - IRVINE	\$0.00	6
16	ADMINISTRATIVE & HUMAN RESOURCES	C13424	01	DEFERRED COMP PLAN SERVICES	BENEFIT FUNDING SERVICES GROUP	\$0.00	6

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13425	58	TRAFFIC SIGNAL SYNCHRONIZATION PROJECT	CITY OF COACHELLA	\$0.00	6
16	ADMINISTRATIVE & HUMAN RESOURCES	C13427	01	INSURANCE CONSULTANT/BROKER SERVICE	MERCER	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13431	27	DEMONSTRATE STAGED COMBUSTION HYDROGEN ASSISTED EMISSION CONTROL SYSTEM	GAS TECHNOLOGY INSTITUTE	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13446	80	REPOWER OF 4 OFF-ROAD VEHICLES	MUTH EQUIPMENT, INC.	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13463	58	AIR FILTRATION FOR SCHOOLS IN EJ AREA	COACHELLA VALLEY UNIFIED SCHOOL DISTRICT	\$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14025	80	REPOWER 2 DIESEL OFF-ROAD CONSTRUCTION VEHICLES	LEE & STIRES INC	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14031	58	INSTALLATION OF SOLAR PHOTOVOLTAIC GROUND MOUNT SYSTEM	PALM SPRINGS UNIFIED SCHOOL DISTRICT	\$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14040	58	INSTALLATION OF SOLAR PHOTOVOLTAIC GROUND MOUNT SYSTEM	RENOVA ENERGY CORP.	\$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14053	01	PHEV FLEET PARTICIPANT AGREEMENT	EPRI	\$0.00	11
26	PLANNING RULE DEV & AREA SOURCES	C14065	01	REVIEW OF SCAQMD SOCIOECONOMIC ASSESSMENT	ABT ASSOCIATES, INC	\$0.00	6
08	LEGAL	C14066	01	CONSULTING SERVICES FOR PLANNING, FIELD TESTING, CONCEPTUAL FLOW MODEL, AND CONCEPTUAL DESIGN OF LANDFILL GAS ODOR CONTROL SYSTEM	RAMIN YAZDANI	\$0.00	6
08	LEGAL	C14068	01	EVALUATE GAS GENERATION CHARACTERISTICS OF THE SUNSHINE CANYON LANDFILL IN SYLMAR, CALIFORNIA	HYDRO GEO CHEM, INC.	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14076	32	REPOWER 4 OFF-ROAD DIESEL VEHICLES	MILLER EQUIPMENT COMPANY INC	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14109	32	REPOWER AND RETROFIT OF 3 OFF ROAD VEHICLES	NICK BELL DBA NB EQUIPMENT	\$0.00	6
08	LEGAL	C14187	01	PROVIDE LEGAL ASSISTANCE WITH RULE 444 AMENDMENT	GAINES & STACEY, LLP	\$5,000.00	

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DEPT ID	DEPT NAME	CONTRACT NUMBER	FUND CODE	DESCRIPTION	VENDOR NAME	CONTRACT AMOUNT	FOOT NOTE
08	LEGAL	C14187	01	PROVIDE LEGAL ASSISTANCE WITH RULE 444 AMENDMENT	GAINES & STACEY, LLP	\$5,000.00	
08	LEGAL	C14187	01	PROVIDE LEGAL ASSISTANCE WITH RULE 444 AMENDMENT	GAINES & STACEY, LLP	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14199	31	SOCALV INFRASTRUCTURE MOA	CLEAN FUEL CONNECTION INC	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14202	31	SOCALV INFRASTRUCTURE MOA	ADOPT A CHARGER, INC.	\$0.00	6
08	LEGAL	C14211	01	LEGAL ADVICE RELATED TO SUBMISSION TO THE SURFACE TRANSPORTATION BOARD (STB) IN RESPONSE TO EPA'S REQUEST FOR DECLARATORY RULING	WILMER CUTLER PICKERING HALE & DORR LLP	\$0.00	6
35	LEGISLATIVE & PUBLIC AFFAIRS	C14237	01	ORGANIZE AND IMPLEMENT SCAQMD ENVIRONMENTAL JUSTICE CONFERENCE	MARIA ROBLES	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14238	81	PROP 1B TRUCK REPLACEMENT PROGRAM	STRENGTH TRANSPORTATION MANAGEMENT	\$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14258	81	PROP 1B TRUCK REPLACEMENT PROGRAM	A-G SOD FARMS, INC.	\$0.00	11
08	LEGAL	C14360	01	OFFICE OF GENERAL COUNSEL DOCUMENT MANAGEMENT SYSTEM	HARBOR LITIGATION SOLUTIONS	\$0.00	6
26	PLANNING RULE DEV & AREA SOURCES	C14421	01	REVIEW OF SCIENTIFIC LITERATURE FOR RESPIRATORY IRRITATIONS, NOSEBLEEDS, AND ODORS IN CHILDREN FROM AIR POLLUTANTS	UNIVERSITY OF CALIFORNIA-LOS ANGELES	\$0.00	6
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14536	81	PROVIDE TECHNICAL ASSISTANCE FOR THE PROP 1B GOODS MOVEMENT PROGRAM	CLEAN FUEL CONNECTION INC	\$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14568	81	TECHNICAL ASSISTANCE, IMPLEMENTATION & OUTREACH SUPPORT FOR PROP 1B GOODS MOVEMENT PROGRAM	TETRA TECH INC	\$0.00	11
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14622	01	CO-SPONSOR CSULB CEERS STUDENT EDUCATIONAL PROJECT 2014	CALIFORNIA STATE UNIVERSITY-LONG BEACH	\$0.00	6
08	LEGAL	C14682	01	ELECTRONIC LEGAL SERVICES/LAW LIBRARY SERVICES	THOMSON REUTERS - WEST PYMT CTR	\$0.00	11
27	INFORMATION MANAGEMENT	C15023	01	MASS EMAIL OPTIMIZATION	GENESIS 1 CONSULTING GROUP	\$0.00	6

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50	ENGINEERING AND COMPLIANCE	C15279	01	EXIDE MITIGATION PLAN FOR CONSTRUCTION OF RISK REDUCTION MEASURES	TETRA TECH BAS	\$0.00	11
44	MSRC	ML11021	23	PURCHASE 7 HEAVY-DUTY CNG VEHICLES	CITY OF WHITTIER	\$0.00	6
44	MSRC	ML11045	23	PURCHASE 1 HEAVY-DUTY CNG VEHICLE	CITY OF NEWPORT BEACH	\$0.00	6
44	MSRC	MS07022	23	INSTALL HYDROGEN STATION-CAL STATE LA	CALIFORNIA STATE UNIVERSITY-LOS ANGELES	\$0.00	6
44	MSRC	MS07080	23	DEMONSTRATE RETROFIT DEVICES ON THREE OFF-ROAD VEHICLES (SHOWCASE PROGRAM)	CITY OF LOS ANGELES-DEPT OF PUBLIC WORKS	\$0.00	6
44	MSRC	MS08067	23	CONSTRUCT CNG FUELING STATION - ANAHEIM	TRILLIUM USA COMPANY	\$0.00	6
44	MSRC	MS11010	23	CONSTRUCT LNG FUELING STATION	BORDER VALLEY TRADING	\$0.00	6
44	MSRC	MS11071	23	INSTALL CNG FUELING STATION	CITY OF TORRANCE	\$0.00	6
44	MSRC	MS11092	23	DEMONSTRATE RETROFIT DEVICES ON OFF-ROAD VEHICLES	GRIFFITH COMPANY	\$0.00	6
44	MSRC	MS12034	23	PURCHASE 2 MEDIUM AND 7 MEDIUM-HEAVY DUTY ON-ROAD VEHICLES	WARE DISPOSAL, INC.	\$0.00	6
08	LEGAL	XC12250	01	PROVIDE RAILROAD LITIGATION SERVICES	LIGHTFOOT STEINGARD & SADOWSKY, LLP	\$0.00	6
<b>Subtotal</b>						<b>\$267,209.00</b>	

**V. TERMINATED CONTRACTS-PARTIAL/NO WORK PERFORMED**

44	SCIENCE & TECHNOLOGY ADVANCEMENT	C10610	80	REPOWER 10 AUXILIARY ENGINES OF 6 MARINE VESSELS	SAUSE BROS. OCEAN TOWING CO., INC.	-\$55,409.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C11087	81	PROP 1B NON-PORT TRUCK RETROFIT PROGRAM	ASBURY ENVIRONMENTAL SERVICES	-\$40,000.00	7

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C11173	32	REPOWER 3 DIESEL CRAWLER TRACTORS, 1 RUBBER-TIERED LOADER, 1 DIESEL EXCAVATOR, & 1 DIESEL SCRAPER	CHINO GRADING, INC	-\$305,817.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C11340	81	PROP 1B TRUCK REPLACEMENT PROGRAM	ANTHONY H. OSTERKAMP JR.	-\$50,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12196	32	REPOWER 19 OFF-ROAD VEHICLES	RRM PROPERTIES, LTD	-\$1,345,532.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12327	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DALTON TRUCKING INC	-\$250,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12330	81	PROP 1B TRUCK REPLACEMENT PROGRAM	VILLA PARK TRUCKING, INC.	-\$360,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12331	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RANDALL FOODS INC.	-\$300,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12342	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RPM TRANSPORATION, INC.	-\$80,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12348	81	PROP 1B TRUCK REPLACEMENT PROGRAM	LEE JENNINGS TARGET EXPRESS, INC.	-\$460,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12352	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SEASON PRODUCE COMPANY	-\$30,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12366	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MATHESON TRUCKING, INC.	-\$120,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12372	81	PROP 1B TRUCK REPLACEMENT PROGRAM	BEST DEMOLITION & RECYCLING CO. INC.	-\$60,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12373	81	PROP 1B TRUCK REPLACEMENT PROGRAM	J.G. RODRIGUEZ TRUCKING	-\$240,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12411	81	PROP 1B TRUCK REPLACEMENT PROGRAM	G.O. RODRIGUEZ TRUCKING, INC.	-\$360,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12446	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MARTIAN TRUCKING, INC.	-\$110,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12447	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FOSTER POULTRY FARMS	-\$200,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12469	81	PROP 1B TRUCK REPLACEMENT PROGRAM	HANNIBAL INDUSTRIES INC.	-\$40,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12492	81	PROP 1B TRUCK REPLACEMENT PROGRAM	TOTTEN TUBES, INC.	-\$35,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12592	81	PROP 1B TRUCK REPLACEMENT PROGRAM	MARTIN PEREZ	-\$200,000.00	7

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12593	81	PROP 1B TRUCK REPLACEMENT PROGRAM	NEAL TRUCKING, INC.	-\$57,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12637	81	PROP 1B TRUCK RETROFIT PROGRAM	RRM PROPERTIES, LTD	-\$20,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12645	81	PROP 1B TRUCK REPLACEMENT PROGRAM	REDLANDS FRUIT COMPANY	-\$100,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12658	81	PROP 1B TRUCK RETROFIT PROGRAM	DART EQUIPMENT CORPORATION	-\$10,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12662	81	PROP 1B TRUCK RETROFIT PROGRAM	SLR ENTERPRISES, INC.	-\$10,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12663	81	PROP 1B TRUCK REPLACEMENT PROGRAM	INLINE DISTRIBUTING CO	-\$10,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12665	81	PROP 1B TRUCK RETROFIT PROGRAM	CERENZIA FOODS INC.	-\$10,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12682	81	PROP 1B TRUCK RETROFIT PROGRAM	CHALLENGE DAIRY PRODUCTS, INC	-\$5,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12815	81	PROP 1B TRUCK REPLACEMENT PROGRAM	TRANSLOADING EXPRESS	-\$40,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C12868	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DOUGLAS STEEL SUPPLY, INC.	-\$60,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13122	81	PROP 1B TRUCK REPLACEMENT PROGRAM	DALTON TRUCKING INC	-\$100,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13124	81	PROP 1B TRUCK REPLACEMENT PROGRAM	F&F TRANSPORT SERVICE INC.	-\$40,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13134	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SOUTH BOUND EXPRESS, INC.	-\$60,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13141	81	PROP 1B TRUCK REPLACEMENT PROGRAM	REDLANDS FRUIT COMPANY	-\$40,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13143	81	PROP 1B TRUCK REPLACEMENT PROGRAM	RRM PROPERTIES, LTD	-\$180,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13176	81	PROP 1B TRUCK REPLACEMENT PROGRAM	PACIFIC TANK LINES, INC.	-\$60,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13193	32	REPOWER 5 OFF-ROAD VEHICLES	PARK WEST LANDSCAPE, INC.	-\$28,715.83	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13244	32	REPOWER 6 OFF-ROAD VEHICLES	WHITTIER FERTILIZER CO.	-\$81,175.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C13283	32	REPOWER 3 DIESEL OFF-ROAD CONSTRUCTION VEHICLES	SAGE GREEN, LLC	-\$517,738.00	7



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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14036	58	PROCURE 1 CNG MEDIUM-DUTY VEHICLE	ST. ELIZABETH OF HUNGARY CATHOLIC CHURCH	-\$5,500.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14149	32	REPOWER 2 OFF-ROAD VEHICLES	PEED EQUIPMENT	-\$150,924.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14176	32	REPLACE 2 OFF-ROAD VEHICLES	KASSEL CONTRACTING, INC.	-\$14,204.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14227	81	PROP 1B TRUCK REPLACEMENT PROGRAM	SSI EXPRESS, INC.	-\$20,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14238	81	PROP 1B TRUCK REPLACEMENT PROGRAM	STRENGTH TRANSPORATION MANAGEMENT	-\$155,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14333	81	PROP 1B TRUCK REPLACEMENT PROGRAM	WESTSIDE BUILDING MATERIAL CORP	-\$125,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14346	81	PROP 1B TRUCK REPLACEMENT PROGRAM	AJR TRUCKING, INC.	-\$150,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14363	81	PROP 1B TRUCK REPLACEMENT PROGRAM	JORLEASE, INC	-\$45,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14533	81	PROP 1B TRUCK REPLACEMENT PROGRAM	GILBERT CANTELLANO	-\$10,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14534	81	PROP 1B TRUCK REPLACEMENT PROGRAM	GIOVANNI B. CARBALLO	-\$4,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C14592	81	PROP 1B TRUCK REPLACEMENT PROGRAM	WILLIAM RAMOS	-\$10,000.00	7
44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15205	81	PROP 1B TRUCK REPLACEMENT PROGRAM	CRAIG REGO	-\$10,000.00	7

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44	SCIENCE & TECHNOLOGY ADVANCEMENT	C15352	81	PROP 1B TRUCK REPLACEMENT PROGRAM	FAUSTINO ANDRADE	-\$40,000.00	7
44	MSRC	ML06035	23	PURCHASE SEVEN (7) CNG REFUSE TRUCKS	CITY OF HEMET	-\$75,893.00	7
44	MSRC	ML08040	23	PURCHASE 16 CNG VEHICLES, EXPAND CNG STATION AND MODIFY MAINTENANCE FACILITY	CITY OF RIVERSIDE	-\$50,000.00	7
44	MSRC	ML11042	23	PURCHASE 1 CNG SWEEPER AND REPOWER 1 HEAVY-DUTY DIESEL VEHICLE	CITY OF CHINO	-\$5,077.00	7
44	MSRC	MS10003	23	PURCHASE 1 VACUUM TRUCK EQUIPPED WITH AN ADVANCED NATURAL GAS ENGINE	CITY OF SIERRA MADRE	-\$13,555.00	7
44	MSRC	MS11062	23	DEMONSTRATE RETROFIT DEVICES ON OFF-ROAD VEHICLES	LOAD CENTER	-\$18,935.00	7
<b>Subtotal</b>						<b>-\$6,974,474.83</b>	

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	<b><u>SPECIAL FUNDS</u></b>						
					<b><u>FOOTNOTES</u></b>		
17	ADV. TECH, OUTREACH & EDU FUND				1		NO FIXED VALUE
20	AIR QUALITY ASSISTANCE FUND				2		RATES VARY - NO FIXED VALUE
23	MSRC FUND				3		REVENUE CONTRACT - NO AMOUNT SHOWN
27	AIR QUALITY INVESTMENT FUND				4		NO COST - COST REALLOCATION
31	CLEAN FUELS FUND				5		CHANGED TO EMPLOYEE STATUS
32	CARL MOYER FUND - SB1107 ACCOUNT				6		NO COST- TIME EXTENSION
33	SCHOOL BUS REPLACEMENT PROGRAM				7		DE-OBLIGATION OF FUNDING
34	ZERO EMISSION VEHICLE INCENTIVE PROGRAM				8		COMPETITIVE SOLICITATION ISSUED BY ANOTHER GOVERNMENT AGENCY
35	AES SETTLEMENT PROJECTS FUND						
36	RULE 1309.1 PRIORITY RESERVE FUND				9		NO COST - AIR MONITORING/LICENSE AGR
37	CARB ERC BANK FUND				10		CNG VEHICLE PARTNERSHIP SELECTION
38	LADWP SETTLEMENT PROJECTS FUND				11		NO COST - CHANGE IN TERMS
39	STATE EMISSIONS MITIGATION FUND				12		FEDERAL GOVERNMENT PASS-THRU
40	NATURAL GAS VEHICLE PARTNERSHIP FUND				13		AT DIRECTION OF LEGISLATIVE COMMITTEE
41	STATE BUG FUND				14		OPTIONAL YEAR RENEWAL/MULTI-YR CONTRACT
45	CBE/CBO SETTLEMENT AGREEMENT FUND				15		TRUCK GRANT PAID TO CASCADE THROUGH LEASE-TO-OWN
46	BP ARCO SETTLEMENT FUND						IS FOR OPERATION AND REPORTING ONLY.
48	HEALTH EFFECTS RESEARCH FUND						
50	DOE ARRA-PLUG-IN HYBRID ELECTRIC VEHICLES				16		AMOUNT UTILIZED MAY BE LESS THAN CONTRACT AMOUNT.
51	DOE ARRA-LNG CORRIDOR EXPANSION						
52	TRAPAC SCHOOL AIR FILTRATION						
53	EMISSION REDUCTION AND OUTREACH FUND						
56	HEROS II PROGRAM FUND						
58	AB1318 MITIGATION FEES FUND						
59	CARL MOYER VOUCHER INCENTIVE FUND						
60	DOE PEV INFRASTRUCTURE PLANNING SPECIAL REVENUE FUND						
61	ADVANCED TECHNOLOGY GOODS MOVEMENT FUND						
71	CNG FUELING STATION ENTERPRISE FUND						
80	CARL MOYER FUND - AB923 ACCOUNT						
81	PROPOSITION 1B - GOODS MOVEMENT FUND						
82	PROPOSITION 1B - LOWER EMISSION SCHOOL BUS						

BOARD MEETING DATE: March 6, 2015

AGENDA NO. 17

**PROPOSAL:** Status Report on Major Projects for Information Management Scheduled to Start During Last Six Months of FY 2014-15

**SYNOPSIS:** Information Management is responsible for data systems management services in support of all SCAQMD operations. This action is to provide the monthly status report on major automation contracts and projects to be initiated by Information Management during the last six months of FY 2014-15.

**COMMITTEE:** No Committee Review

**RECOMMENDED ACTION:**  
Receive and file.

Barry R. Wallerstein, D.Env.  
Executive Officer

JCM:MAH:OSM:nv

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### **Background**

Information Management (IM) provides a wide range of information systems and services in support of all SCAQMD operations. IM's primary goal is to provide automated tools and systems to implement Board-approved rules and regulations, and to improve internal efficiencies. The annual Budget specifies projects planned during the fiscal year to develop, acquire, enhance, or maintain mission-critical information systems.

### **Summary of Report**

The attached report identifies each of the major projects/contracts or purchases that are expected to come before the Board between January 1 and June 30, 2015. Information provided for each project includes a brief project description, FY 2014-15 Budget, and the schedule associated with known major milestones (issue RFP/RFQ, execute contract, etc.).

### **Attachment**

Information Management Major Projects for Period January 1 through June 30, 2015

**ATTACHMENT**  
**March 6, 2015 Board Meeting**  
**Information Management Major Projects**  
**for the Period of January 1 through June 30, 2015**

Item	Brief Description	Budgeted Funds	Schedule of Board Actions	Status
Systems Development, Maintenance and Support	Provide Development, Maintenance and Support for: <ul style="list-style-type: none"> <li>• Web Application Development</li> <li>• E-Commerce Infrastructure</li> <li>• CLASS System Replacement</li> <li>• CLASS System(s) Enhancements</li> <li>• Version Upgrades</li> </ul>	\$449,270	April 3, 2015	On Schedule
Issue RFP for Purchase of Conference Room Enhancements	The audio visual upgrade project for conference rooms GB and Hearing Board will enhance functionality of both conference rooms.	To be budgeted	April 3, 2015	On Schedule

Double-lined Rows - Board Agenda items current for this month

Shaded Rows - activities completed

BOARD MEETING DATE: March 6, 2015

AGENDA NO. 19

REPORT: Administrative Committee

SYNOPSIS: The Administrative Committee met on Friday, February 13, 2015. The Committee discussed various issues detailed in the Committee report. The next Administrative Committee meeting is scheduled for Friday, March 13, 2015 at 10:00 a.m.

RECOMMENDED ACTION:  
Receive and file.

Dr. William A. Burke, Chair  
Administrative Committee

drw

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**Attendance:** Attending the February 13, 2015 meeting were Committee Members Judith Mitchell at SCAQMD headquarters, and Dr. William Burke and Dr. Clark E. Parker, Sr. via videoconference. Supervisor Janice Rutherford also observed at SCAQMD headquarters.

**ACTION/DISCUSSION ITEMS:**

1. **Board Members' Concerns:** Executive Officer Dr. Barry Wallerstein reported that Supervisor Mike Antonovich had recently referred the District for possible participation in the Career Development Intern Program administered by Los Angeles County to benefit transition-aged foster youth, and that staff would report on the program at a future Administrative Committee meeting. Chairman Burke commented favorably on the Program and was pleased to note the District's possible involvement. In addition, Dr. Wallerstein advised that a salary adjustment for Board Consultants and Assistants would be considered shortly.. Dr. Parker suggested a review of Board Consultant and Assistant salaries compared to that provided staff.

2. **Chairman's Report of Approved Travel:** Dr. Wallerstein noted that Dr. Lyou traveled to Sacramento to attend the Low Carbon Fuel Summit on February 3, which Councilmember Mitchell attended as well. Dr. Parker commented on the upcoming Environmental Justice For All Conference being hosted by the District on February 27<sup>th</sup>, and indicated the event will have many impressive speakers.
3. **Approval of Compensation for Board Member Assistant(s)/Consultant(s):** None to report.
4. **Report of Approved Out-of-Country Travel:** None to report.
5. **Set Public Hearing April 3, 2015 to Receive Public Input on Executive Officer's Draft Goals & Objectives and Priority Objectives for FY 2015-16:** Dr. Wallerstein gave a cursory overview of the Draft Goals & Priority Objectives for FY 2015-16 after which Dr. Parker inquired on the recent media coverage involving fracking waste water and benzene emissions, whereupon Dr. Wallerstein advised staff would present field observations on this issue and update the Stationary Source Committee on possible regulatory amendments . Dr. Wallerstein further commented that, with the recent price reductions in gasoline, planned fracking activity and industry pursuit thereof had greatly slowed.
6. **Appropriate Funds from Designation for Litigation and Enforcement and Authorize Amending/Initiating Contracts with Outside Counsel and Specialized Legal Services:** General Counsel Kurt Wiese reported briefly on the proposed budget increase and contract amendment for specialized legal services and counsel, noted that the increase was largely due to Exide and Phillips 66 litigation, and advised that Phillips 66 was obligated to reimburse the District for legal expenses upon the conclusion of the litigation.  
  
Moved by Parker; seconded by Mitchell; unanimously approved.
7. **Report of RFQs Scheduled for Release in March:** Chief Financial Officer Michael O'Kelly commented that the proposed purchase of air monitoring equipment was the only anticipated RFQ for release in March.  
  
Moved by Parker; seconded by Mitchell; unanimously approved.
8. **Local Government & Small Business Assistance Advisory Group Minutes for the December 12, 2014 Meeting (written report):** Attached for information only are the minutes from the December 12, 2014 meeting of the Local Government & Small Business Assistance Advisory Group.

9. **Review of the March 6, 2015 Governing Board Agenda:** There were no questions regarding the March 6, 2015 Governing Board Agenda.
10. **Other Business:** None
11. **Public Comment:** Rita Loof, representing RadTech International, commented on the Executive Officer's Draft Goals & Priority Objectives, Goal 1, Number 14, stating that in emphasizing timely processing of permits staff should encourage ultraclean technology requiring no permits, and encouraged revision of Rule 219 to address such issues.

Meeting adjourned at 10:39 a.m.

**Attachment**

Local Government & Small Business Assistance Advisory Group Minutes from the December 12, 2014 Meeting





# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178  
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## LOCAL GOVERNMENT & SMALL BUSINESS ASSISTANCE ADVISORY GROUP FRIDAY, DECEMBER 12, 2014 MEETING MINUTES

### **MEMBERS PRESENT:**

Dennis Yates, Mayor, City of Chino and LGSBA Chairman  
Ben Benoit, Councilman, City of Wildomar and LGSBA Vice Chairman  
Paul Avila, P.B.A. & Associates  
Geoffrey Blake, Metal Finishers of Southern California/All Metals  
John Hill, Riverside County Representative  
Maria Elena Kennedy, Kennedy Communications  
Rita Loof, RadTech International

### **MEMBERS ABSENT:**

Felipe Aguirre  
Todd Campbell, Clean Energy  
Mary Ann Lutz, Mayor, City of Monrovia  
Kelly Moulton, Paralegal  
David Rothbart, Los Angeles County Sanitation District  
Lupe Ramos Watson, Councilmember, City of Indio

### **OTHERS PRESENT:**

Dr. William A Burke, Governing Board Chairman  
Dr. Clark Parker, Governing Board Member  
Josie Gonzales, Governing Board Member  
Earl Elrod, Board Member Assistant (*Yates*)  
Ruthanne Taylor Berger, Board Member Assistant (*Benoit*)

### **SCAQMD STAFF:**

Derrick J. Alatorre, Asst. Deputy Executive Officer/Public Advisor  
Ruby Fernandez, Sr. Deputy District Counsel  
Carol Gomez, Planning & Rules Manager  
Kathryn Higgins, Program Supervisor  
Elaine-Joy Hills, AQ Inspector II  
Lori Langrell, Secretary  
Guillermo Sanchez, Sr. Public Affairs Manager  
Lisha Smith, Deputy Executive Officer  
Jill Whynot, Asst. Deputy Executive Officer

### **Agenda Item #1 - Call to Order/Opening Remarks**

Mayor Dennis Yates called the meeting to order at 12:00 p.m.

**Agenda Item #2 – Approval of October 10, 2014 Meeting Minutes/Review of Follow-Up/Action Items**

Chair Yates called for approval of the October 10, 2014 meeting minutes. The Minutes were approved unanimously.

**Agenda Item #3 –Review of Follow-Up/Action Items**

Mr. Derrick Alatorre provided an update on the action item related to emissions reductions achieved through the Check Before You Burn program. Mr. Alatorre indicated that the 2012 control measure was calculated to potentially reduce Basin-wide ambient PM2.5 concentrations on these episodic no-burn days by about 7.1 tons per winter day (assuming 75% rule effectiveness). As one might assume, tracking actual emission reductions are difficult. The control measure also stated that the cost effectiveness was not estimated, but increasing the number of curtailment days would result in relatively few cost increases to the impacted community.

**Agenda Item #4 –Implementation of AB 2766 Requirements**

This item was tabled until the January 16, 2015 meeting upon District Counsel’s advice to comply with Brown Act requirements, given the participation of additional board members as guests, establishes a quorum.

**Agenda Item #5 – Local Government & Small Business Assistance Advisory Group 2014 Accomplishments/2015 Goals & Objectives**

Mr. Alatorre presented the LGSBA 2014 Accomplishments, and 2015 Goals & Objectives. Mr. Alatorre indicated the Goals & Objectives were distributed previously to the group via email. One recommendation for addition to the 2015 Objectives was made by member Mr. David Rothbart of Los Angeles County Sanitation. Mr. Rothbart indicated he wished to add “status update on SCAQMD’s implementation of OEHHA’s updated methods for estimating cancer risks.” With the group’s approval, this item will be added to the goals for 2015. Mr. Alatorre asked for any other recommendations. No further recommendations were noted, but Mr. Alatorre indicated that the members can email suggestions for consideration.

**Agenda Item #5 –Monthly Report on Small Business Assistance Activities**

No comments.

**Agenda Item #6 - Other Business**

No comments.

**Agenda Item #7 - Public Comment**

No comments.

**Adjournment**

The meeting adjourned at 12:06 p.m.

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BOARD MEETING DATE: March 6, 2015

AGENDA NO. 20

REPORT: Investment Oversight Committee

SYNOPSIS: The Investment Oversight Committee met Friday, February 20, 2015 and discussed various issues detailed in the Committee report. The next Investment Oversight Committee meeting is scheduled for Friday, June 19, 2015 at 12:00 noon in Conference Room CC2.

RECOMMENDED ACTION:  
Receive and file this report.

Michael Antonovich, Chair  
Investment Oversight Committee

MBO:lg

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**Attendance:** Present at SCAQMD were Committee members Gary Burton, Richard Dixon, and Dr. Joseph K. Lyou. Supervisor Michael Antonovich and Councilmember Michael A. Cacciotti attended by teleconference. Absent were Committee members Dr. William Burke and Brent Mason.

**Investment Committee Action Items:**

Quarterly Report of Investments: The Committee reviewed the quarterly investment report that was provided to the Governing Board. For the month of December 2014, the SCAQMD's weighted average yield on total investments of \$579,678,189.97 from all sources was .66%. The allocation by investment type was 84.63% in the Los Angeles County Pooled Surplus Investment Fund (PSI) and 15.37% in the State of California Local Agency Investment Fund (LAIF) and Special Purpose Investments (SPI). The one-year Treasury Bill rate as of December 31, 2014 was .25%. The Committee unanimously approved the quarterly report.

Approval of Annual Investment Policy and Delegation of Authority to Los Angeles County Treasurer to Invest SCAQMD Funds: The Committee reviewed the Annual Investment Policy for 2015 and SCAQMD's renewal of its delegation of authority to its treasurer. The SCAQMD Annual Investment Policy and the reauthorization of the Los Angeles County Treasurer to invest and reinvest SCAQMD funds were unanimously recommended for approval at the March 6, 2015 meeting of the Governing Board.

Approval of Revised Treasury Operations Contingency Plan and Procedures and Delegation of Authority to Appoint an Acting Treasurer: The Committee discussed the need to revise the Treasury Operations Contingency Plan and Procedures primarily to ensure it is up to date and current. The Committee discussed the Executive Officer's request that the delegation of authority to appoint an Acting Treasurer in certain emergency situations be revised to delegate this authority to the Governing Board Chair, Vice-Chair, and then the Executive Officer as opposed to the existing delegation which grants this emergency authority solely to the Executive Officer. In addition, the Committee discussed the requirement that the Chief Financial Officer or Controller would be designated as the Acting Treasurer. The SCAQMD Revised Treasury Operations Contingency Plan and Procedures and Delegation of Authority to Appoint an Acting Treasurer were unanimously recommended for approval at the March 6, 2015 meeting of the Governing Board.

Approve Rescheduling the May 15, 2015 Investment Oversight Committee Meeting Date to June 19, 2015: At the request of the Committee, polling was conducted to secure a date in June to when the May meeting could be rescheduled. June 19 best accommodated members' availability and did not conflict with other SCAQMD committee meetings. The Committee approved the June 19, 2015 meeting date.

**Investment Committee Discussion Item:**

Financial Market Update: Sarah Meacham from PFM Asset Management provided the Committee with information on current investment markets, economic conditions, and the overall outlook. She presented market information on the recent upswing and subsequent downswing in Treasury yields, continued lower than average two-year and five-year Treasury yields, continued steep yield curve, heightened interest rate volatility, and fixed-income market performance. Economic indicators were also presented showing slowing economic growth, lower retail sales, falling gas prices, strengthening labor market, increased value of the dollar, and continued patient monetary policy.

**Other Business:** None

**Public Comment:** None

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BOARD MEETING DATE: March 6, 2015

AGENDA NO. 21

REPORT: Legislative Committee

SYNOPSIS: The Legislative Committee held a meeting on Friday, February 13, 2015. The next Legislative Committee meeting is scheduled for Friday, March 13, 2015 at 9 a.m. in Conference Room CC8.

The Committee deliberated on agenda items for Board consideration and recommended the following actions:

<b>Agenda Item</b>	<b>Recommendation</b>
2015 Legislative Goals and Objectives	Approve
SB 32 (Pavley) California Global Warming Solutions Act of 2006: Emissions Limit	Support with Amendments
AB 156 (Perea) California Global Warming Solutions Act of 2006: Investment Plan	Support

**RECOMMENDED ACTION:**

Receive, file this report, and approve agenda items as specified in this letter.

Judith Mitchell  
Chair  
Legislative Committee

### **Attendance [Attachment 1]**

The Legislative Committee met on February 13, 2015. Committee Members, Chair Councilmember Judith Mitchell and Supervisor Janice Rutherford, were present at SCAQMD's Diamond Bar headquarters. Committee Members Supervisor Michael Antonovich, Councilmember Joe Buscaino and Dr. Clark Parker attended via videoconference. Dr. William A. Burke was appointed to the Legislative Committee and also attended via videoconference.

### **Update on Federal Legislative Issues**

SCAQMD federal legislative consultant, Mia O'Connell of the Carmen Group, reported on various items relating to Washington, D.C.

Ms. O'Connell began her report with an update on the MAP-21 reauthorization legislation. She stated that U.S. Senate Environment and Public Works (EPW) Committee Chairman James Inhofe and Chairman Bill Shuster of the U.S. House Committee on Transportation and Infrastructure (T&I) have indicated that passing a MAP-21 reauthorization bill is their number one priority. They may hold joint committee hearings and will work to keep the Senate and House bills in sync as much as possible. Ms. O'Connell stated that revenue remains the toughest issue. The Administration's Budget for FY 2015-16 proposed a \$478 billion six-year bill funded through the current gas tax and a repatriation tax on overseas corporate assets. Indications from leadership in both houses are that there are not sufficient votes to pass a gas tax increase, and that some other funding method will have to be identified.

Ms. O'Connell reported that various Senate and House hearings regarding the MAP-21 reauthorization have taken place; however, there has been no progress made towards passage of this legislation. The Senate hearings included a January 28<sup>th</sup> hearing that featured testimony from U.S. Transportation Secretary Anthony Foxx and four state governors. Secretary Foxx also testified at a House hearing in February. Markup hearings of the Senate and House versions of the MAP-21 Reauthorization bill are expected in late March or early April.

Ms. O'Connell also informed the Committee that follow-up activities have been taking place after a January visit to Washington, D.C. by SCAQMD staff, focused on promoting SCAQMD's legislative proposals for the MAP-21 Reauthorization legislation.

Ms. O'Connell reported that Chairman Shuster introduced the Passenger Rail Reform and Investment Act (PRRIA - HR 749) on February 5<sup>th</sup>. It is virtually identical to the bipartisan bill that was approved in committee last year. It helps improve infrastructure for intercity passenger rail and is mostly focused on Amtrak. The House T&I Committee marked up the bill on February 12<sup>th</sup> without amendments. The bill has

bipartisan support and is co-sponsored by both Chairman Shuster, a Republican, as well as ranking member of the T&I Committee, Peter DeFazio, a Democrat.

Lastly, Ms. O'Connell reported that the House Energy and Commerce Committee recently released an Energy Framework relating to a comprehensive energy package, which will address four policy areas: modernizing infrastructure, a 21<sup>st</sup> century energy workforce, energy diplomacy, and efficiency and accountability. Discussion bill drafts are expected in the coming months.

SCAQMD federal legislative consultant Mark Kadesh, of Kadesh & Associates, also reported on various items relating to Washington, D.C issues.

Mr. Kadesh reported to the Committee that the President's budget resolution was released on February 2<sup>nd</sup>. Within that budget, there were proposals to slightly increase the U.S. Environmental Protection Agency (U.S. EPA) budget to \$8.6 billion. There was also a proposal for major funding for clean power incentives. The President also proposed a cut in Diesel Emission Reduction Act funding from \$30 million to \$10 million; however, this is likely to be restored by Congress. Mr. Kadesh informed the Committee that budget hearings began recently in the Appropriations committees and will be ongoing until the budget is resolved.

Mr. Kadesh also reported that Senators Barbara Boxer and Rand Paul have discussed a Senate legislative proposal relating to the surface transportation bill that would rely on repatriation to fund the Highway Trust Fund. However, there is still not a consensus funding mechanism for the bill. Further, Senator Boxer used her prerogative as Senate EPW Committee Ranking Member to take the position.

Finally, SCAQMD federal legislative consultant Warren Weinstein, of Kadesh & Associates, reported that industry and labor groups opposed to U.S. EPA's Cross State Air Pollution Rule (CSAPR) asked the D.C. Court of Appeals to vacate all or part of the rule, which went into effect on January 1<sup>st</sup>. The CSAPR requires states to reduce power plant emissions (NO<sub>x</sub> and SO<sub>x</sub>) that contribute to ozone and/or fine particle pollution in other states. A decision from the court is expected before the end of the month.

### **Update on State Legislative Issues**

SCAQMD state legislative consultant Will Gonzalez, of Gonzalez, Quintana & Hunter, briefed the Committee on the Senate's package of legislative proposals known as "Powering the New Clean-Energy Economy" which was released this week. Senate Pro Tem Kevin De León, along with Senators Pavley, Wieckowski, Hueso, and Leno, described the legislative proposals as targeting climate change, renewables, job growth, public health, and the economy. The legislative package includes:

**SB 350 (De León and Leno)** Golden State Standards: Implements the 'three 50's' to be achieved by 2030: a 50% reduction in petroleum use, a 50% renewables standard, and a 50% increase in energy efficiency of existing buildings.

**SB 32 (Pavley)** Building for the Future: Establishes new greenhouse gas (GHG) emissions and pollution reduction levels for 2050 at 80% below 1990 levels, and allows the California Air Resources Board (CARB) to establish interim targets for 2030 and 2040.

**SB 185 (De León)** Investing with Values and Responsibility: Would require public retirement funds to divest any interests they have in thermal coal companies.

**SB 189 (Hueso)** Maximizing Jobs and Economic Growth: Would create a committee to advise agencies on the most effective ways to spend money collected in clean energy and GHG reduction funds.

In support of the legislation they also unveiled the Senate's new climate website: <http://focus.senate.ca.gov/climate>.

Additionally, Senator Jackson has introduced SB 180 Electricity; Emissions of Greenhouse Gases to update the emission performance standard for power plants. The bill requires the California Public Utilities Commission (PUC) by June 2017, and with coordination from the California Energy Commission (CEC) and CARB, to establish new regulations regarding emissions standards for power plants. The bill adds a definition for "peaker plants" and requires the PUC to implement standards specific to them as well.

SCAQMD state legislative consultant Paul Gonsalves of Joe A. Gonsalves & Son, also briefed the Committee on key Sacramento issues. Mr. Gonsalves first noted that this has been the slowest bill introduction rate in recent memory.

To date only 576 bills have been introduced – about one-third to one-half the normal rate. He attributes the change to members now having 12 years to make their legislative mark, allowing them to be more patient and methodical with their legislative package. Nevertheless, he anticipates a large spike in bills introduced just before the bill introduction deadline at the end of February, but still not like in years past.

Second, Mr. Gonsalves reported on the Senate hearing held on the implementation of SB 4 (Pavley), Oil and Gas: Well Stimulation the first-of-its-kind legislation regulating hydraulic fracturing and other well stimulation treatments. Highlights from the hearing include an update on the status of the study on the issue being conducted by the Division of Oil, Gas, and Geothermal Resources (DOGGR) as well as DOGGR's admission that it has permitted the injection of waste water into federally protected



aquifers. A number of legislators have stated their preference to place a moratorium on hydraulic fracturing until the studies are completed, but no legislation has been introduced yet. Thirdly, Mr. Gonsalves reported that the Speaker has announced her transportation plan of two billion dollars a year for the next five years, comprised of existing funding and an additional eight hundred million dollars a year in new revenues derived from some still-to-be-defined road user fee. Mr. Gonsalves will continue to monitor and update SCAQMD as details develop.

### **2015 Legislative Goals and Objectives [Attachment 2]**

Lisha B. Smith, Deputy Executive Officer, presented to the Committee the staff recommendations for SCAQMD's 2015 federal and state Legislative Goals and Objectives. The Goals and Objectives presented for approval reflect prior Board direction and are intended to give staff continued direction, and enhance focus on existing and ongoing legislative efforts.

Supervisor Rutherford sought clarification on the federal goals and objectives relative to mobile sources being listed on the state side, but not on the federal side. Ms. Smith responded that it is not listed as a specified category as it is in the state side, but is instead broken out into further categories of transportation – zero emission vehicles, marine vessels and locomotives – as addressed through federal goals and objectives. In addressing staff's efforts regarding federal mobile sources, SCAQMD Executive Officer Barry Wallerstein mentioned the agency's separate federal surface transportation reauthorization legislation proposals for MAP-21 and passenger rail. He added that SCAQMD staff shared these proposals with each of the four county transportation agencies prior to their presentation and adoption by the Legislative Committee and then the SCAQMD Board.

Dr. Burke suggested that, in future years, staff make a presentation to the Board Assistants on proposed Goals and Objectives prior to their presentation to the Legislative Committee so that they can discuss it in advance with their Board Members. Chair Mitchell said that this could be implemented starting next year.

***The Legislative Committee unanimously approved staff's recommendation for 2015 Legislative Goals and Objectives.***

### **Recommend Position on State Bills [Attachment 3]**

Philip Crabbe, Community Relations Manager presented on two greenhouse gas (GHG) related bills.

**SB 32 (Pavley) California Global Warming Solutions Act of 2006: Emissions Limit,** requires CARB to approve a statewide GHG emission limit equivalent to 80% below the 1990 level to be achieved by 2050. The bill would also authorize CARB to adopt interim GHG emissions level targets to be achieved by 2030 and 2040.

Staff recommended amendments that would: 1) provide for GHG standards which are adequate to simultaneously achieve national ambient air quality standards by the applicable deadlines; and that would 2) include criteria and toxics emissions reductions as a priority in creating the GHG standards.

Recommended Position: Support with Amendments

Dr. Parker asked for clarification on the recommended staff amendments. Dr. Wallerstein responded that the amendments would facilitate a broader perspective, providing for strategies that call for actions that will simultaneously reduce GHG emissions as well as criteria pollutants and air toxics.

***The Legislative Committee approved staff's recommendation for a SUPPORT WITH AMENDMENTS position on SB 32 (Pavley).***

***AYES: Antonovich, Burke, Buscaino, Mitchell, and Parker***

***NOES: Rutherford***

**AB 156 (Perea) California Global Warming Solutions Act of 2006: Investment Plan.** This bill would require the California Department of Finance to include in the three-year investment plan (for moneys deposited in the Greenhouse Gas Reduction Fund), a funding allocation to provide technical assistance to disadvantaged communities to assist them in proposing projects for inclusion in that three-year investment plan.

Recommended Position: Support

***The Legislative Committee approved staff's recommendation for a SUPPORT position on AB 156 (Perea).***

***AYES: Antonovich, Burke, Buscaino, Mitchell, and Parker***

***NOES: Rutherford***

Guillermo Sanchez, Senior Public Affairs Manager presented on three Assembly bills related to the use of unmanned aircraft:

- **AB 14 (Waldron) Unmanned Aircraft: Task Force**
- **AB 37 (Campos) Unmanned Aircraft Systems**
- **AB 56 (Quirk) Unmanned Aircraft Systems**

On the one hand, unmanned aircraft or “drones” provide the opportunity for safer, quicker, and more efficient monitoring and data collection under emergency situations

as well as ongoing compliance, planning, and research purposes consistent with constitutional requirements and statutory authorities. By the same token, the use of unmanned drones raises legitimate and understandable concerns for privacy rights. After presentation of the three bills, the Committee tabled taking a position on these items pending a memo outlining federal action on the issue and the specific relevance of unmanned aircraft for potential SCAQMD applications related to its agency responsibilities.

**Clarification on H.R. 5101 (Hahn) National Freight Network Trust Fund Act of 2014**

Ms. Smith clarified the position previously taken on H.R. 5101 (Hahn). She noted two slightly different identified positions were stated in the Legislative Committee Board Letter included for the February Governing Board meeting, and clarified that the Committee’s official position taken on the bill was “Support and Recommend Amendments” as approved in January.

**Report from SCAQMD Home Rule Advisory Group [Attachment 4]**

Please refer to Attachment 4 for written report.

**Other Business:**

None

**Public Comment Period:**

No public comment.

**Attachments**

1. Attendance Record
2. 2015 Legislative Goals and Objectives
3. Bill and Bill Analyses
4. SCAQMD Home Rule Advisory Group Report

## ATTACHMENT 1

### ATTENDANCE RECORD –February 13, 2014

#### **DISTRICT BOARD MEMBERS:**

Dr. William A. Burke (Videoconference)  
Councilmember Judy Mitchell, Chair  
Supervisor Michael Antonovich (Videoconference)  
Councilmember Joe Buscaino (Videoconference)  
Dr. Clark E. Parker, Sr. (Videoconference)  
Supervisor Janice Rutherford

#### **STAFF TO COMMITTEE:**

Lisha B. Smith, Deputy Executive Officer  
Derrick Alatorre, Assistant Deputy Executive Officer/Public Advisor  
Guillermo Sanchez, Senior Public Affairs Manager  
Julie Franco, Senior Administrative Secretary

#### **DISTRICT STAFF:**

Barry R. Wallerstein, Executive Officer  
Barbara Baird, Chief Deputy Counsel  
Elaine Chang, Deputy Executive Officer  
Phil Fine, Assistant Deputy Executive Officer  
Peter Greenwald, Sr. Policy Advisor  
Chris Marlia, Assistant Deputy Executive Officer  
Matt Miyasato, Deputy Executive Officer  
Mohsen Nazemi, Deputy Executive Officer  
Laki Tisopulos, Assistant Deputy Executive Officer  
William Wong, Principal Deputy District Counsel,  
Leeor Alpern, Senior Public Information Specialist (Videoconference)  
Marc Carrel, Program Supervisor  
Tina Cox, Senior Public Information Specialist  
Robert Paud, Telecommunications Technician II  
Barbara Radlein, AQ Specialist  
Kim White, Public Affairs Specialist  
Patti Whiting, Staff Specialist  
Rainbow Yeung, Senior Public Information Specialist (Videoconference)

#### **OTHERS PRESENT:**

Mark Abramowitz, Governing Board Member Consultant (Lyou)  
Tricia Almiron, SANBAG  
Jason Gonsalves, Joe A. Gonsalves & Son (teleconference)  
Paul A. Gonsalves, Joe A. Gonsalves & Son (teleconference)  
Will Gonzalez, Gonzalez, Quintana & Hunter, LLC (teleconference)  
Stewart Harris, Carmen Group (teleconference)  
Gary Hoitsma, Carmen Group (teleconference)  
Mark Kadesh, Kadesh & Associates (teleconference)  
Chris Kierig, Kadesh & Associates (teleconference)  
Bill LaMarr, California Small Business Alliance  
Rita Loof, RadTech  
Clayton Miller, Construction Industry Air Quality Coalition  
Mia O'Connell, Carmen Group (teleconference)  
Andy Silva, Governing Board Assistant (Rutherford)  
Warren Weinstein, Kadesh & Associates (teleconference)



# South Coast Air Quality Management District

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## ATTACHMENT 2a

### **SCAQMD's Federal Legislative Goals & Objectives for 2015**

*The following goal and objectives are identified to facilitate attainment of federal clean air standards within the South Coast region by statutory deadlines, while working with Congress, the White House, federal, state and local agencies, business, environmental and community groups, and other stakeholder:*

#### ***Technology Advancement***

Maintain and/or expand funding opportunities for advanced clean technologies and clean air research, development, demonstration and deployment programs, including those related to:

- Zero and near-zero emission technologies;
- Clean vehicles (such as light-, medium- and heavy-duty vehicles, locomotives, marine vessels, and aircraft technologies), clean fuels and refueling technologies and infrastructure;
- Clean energy sources;
- Implementation of Board-approved Air Quality Management Plan (AQMP); and
- Implementation of the Clean Communities Plan.

#### ***Marine Vessels***

Pursue legislative and/or administrative policies that will further reduce marine vessel emissions and will ensure, through regulatory and/or incentive-based policies that the cleanest vessels come to U.S. ports.

#### ***Surface Transportation & Goods Movement***

Enhance the provisions of surface transportation reauthorization legislation (i.e., successor legislation to the MAP-21 law) to better include air quality considerations, particularly with respect to goods movement and energy issues.

#### ***Locomotives***

Pursue efforts to reduce locomotive emissions, through regulatory and/or incentive-based policies.

#### ***Reduction of Toxic Emissions***

Expand funding under the Diesel Emission Reduction Act (DERA), and through other legislative and administrative programs, to reduce toxic emissions, and the public's exposure to toxic emissions, within the South Coast region.

***Clean Air Act***

Ensure adequate SCAQMD authority under the federal Clean Air Act (CAA) and extend or enhance SCAQMD's subvention funding under CAA Sections 103 and 105.

***National Ambient Air Quality Standards and SIP***

Support policies that protect science-driven and health-based determinations of national ambient air quality standards.

Support legislation and/or administrative efforts to streamline and provide flexible implementation of SIP requirements, as needed, to ensure feasibility of attainment.

***Climate Change***

Seek to influence climate change initiatives and facilitate their implementation at local levels, to promote co-benefits with NAAQS and air toxics reduction, consistent with the Board's policy.

***New Source Review Offsets***

Modernize federal New Source Review offset requirements for areas where the supply of offsets is inadequate, while furthering the pursuit of clean air objectives.

***Environmental Justice***

Support legislation which promotes environmental justice initiatives that will reduce localized health risks, develop clean air technologies that directly benefits disproportionately impacted communities, and enhance community participation in decision-making.



# South Coast Air Quality Management District



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## **ATTACHMENT 2b**

### **SCAQMD's State Legislative Goals & Objectives for 2015**

*The following goal and objectives are identified to facilitate attainment of clean air standards within the South Coast region by statutory deadlines, while working with Sacramento legislators, federal state and local agencies, business, environmental and community groups, and other stakeholders:*

#### ***SCAQMD Authority / Policy Implementation***

Ensure adequate SCAQMD authority for implementation of the Board's clean air policies and programs, as required by state and federal law, including the Air Quality Management Plans (AQMPs). As well, seek to broaden current air district authority to address chronic, serial violators.

#### ***Air Quality Funding***

Right-size funding for clean air programs that protect public health, particularly incentive programs and research and development projects that create opportunities to partner with local businesses, communities and residents.

Also, work with CAPCOA, ARB and other stakeholders to establish greater flexibility in the implementation of the Carl Moyer Program to further maximize emission reductions and program efficiencies.

#### ***Environmental Justice***

Support legislation to promote environmental justice initiatives, to reduce localized health risks, to develop clean air technology that directly benefits disproportionately impacted communities, and to enhance community participation in decision-making.

#### ***Mobile Sources***

Support legislative and/or other actions that reduce mobile source emissions within the South Coast region, as needed, to attain clean air standards by statutory deadlines. Oppose legislative efforts to roll back cost-effective, feasible regulations needed to attaining clean air standards pursuant to the Air Quality Management Plan.

#### ***Surface Transportation & Goods Movement***

Support and expand air quality policy and funding considerations regarding the implementation of state and federal surface transportation and goods movement policies and programs, including those relating to MAP-21 and its successor legislation.

### ***Climate Change***

Seek to influence climate change initiatives and facilitate their implementation consistent with Board policy. In particular, support efforts directing that AB 32 revenue auctions be spent on programs that maximize co-benefits, promote near-zero and zero-emission vehicles, and address air quality and public health impacts in disproportionately affected communities.

### ***Energy***

Support legislation that advances the Board's Energy Policy which promotes reliable, cost effective and clean energy for all consumers in the District facilitating attainment of clean air standards and support for a healthy economy.

### ***Salton Sea***

In conjunction with the Imperial County Air Pollution Control District and other stakeholders, work on legislation mitigating the Salton Sea's potential for increased emissions as well as its potential to generate renewable energy.

### ***New Source Review Offsets***

Monitor and engage in policy efforts related to New Source Review emission offset requirements for stationary sources, as necessary, while furthering the pursuit of clean air objectives.

### ***Education and Outreach***

Support legislation which promotes environmental justice initiatives that will reduce localized health risks, develop clean air technologies that directly benefits disproportionately impacted communities, and enhance community participation in decision-making.



## **ATTACHMENT 3a**

### **SB 32 (Pavley)**

#### California Global Warming Solutions Act of 2006: Emissions Limit

**Summary:** This bill would require the California Air Resources Board (ARB) to approve a statewide greenhouse gas (GHG) emission limit that is equivalent to 80% below the 1990 level, to be achieved by 2050. The bill would also authorize ARB to adopt interim GHG emissions level targets to be achieved by 2030 and 2040.

**Background:** The California Global Warming Solutions Act of 2006 (AB 32) designates ARB as the state agency charged with monitoring and regulating sources of emissions of GHG. ARB is required to adopt a statewide GHG emissions limit equivalent to the statewide GHG emissions level in 1990, to be achieved by 2020, and to adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective GHG emissions reductions. Air districts also retain authority to regulate GHGs from nonvehicular sources.

Since 2006, the state has reduced nearly 100 million tons of GHG, equal to the pollution from burning 11 billion gallons of gasoline. California has reduced about half the pollution required to meet the 2020 goal. In the process of reducing pollution, California has attracted \$27 billion in private investment in clean energy businesses, which now employ hundreds of thousands of people.

ARB is authorized under AB 32 to “maintain and continue” GHG reductions beyond 2020 and recommend implementation strategies to the Legislature. In the Scoping Plan Update issued in May 2014, ARB identified a number of cost-effective, technologically feasible pathways to emissions reductions required by 2030, 2040 and 2050 to adequately protect the health, safety and welfare of Californians from the mounting costs of unabated climate change.

Setting clear, achievable climate pollution reduction targets in law and identifying priorities to guide implementation will provide critical accountability, as well as certainty to businesses investing for the long term in California. The state also has an opportunity to build on its first mover advantage as a technology and policy innovation leader as the President, international trading partners such as China and Mexico, and neighboring states, prepare to chart their own pathways to climate progress beyond 2020.

To achieve its climate goals, California will need to ensure that GHG targets are integrated with existing complementary policies such as energy efficiency requirements for buildings, appliances and cars, clean power standards, and sustainable land use policies, to maximize the effectiveness of pollution reduction overall.

This bill would set an enforceable GHG reduction target of 80 percent below 1990 levels by 2050, the level identified by the international scientific community as necessary to stave off the worst effects of climate change. The target is guided by science, but this bill provides flexibility for the Legislature and responsible agencies to adjust the goal along the way based on changing technological and economic conditions.

**Status:** 1/15/15 - Referred to Senate Committee on Environmental Quality.

**Specific Provisions:** Specifically, this bill would:

1. Require ARB to approve a statewide GHG emission limit that is equivalent to 80% below the 1990 level, to be achieved by 2050.
2. Authorize ARB to adopt interim GHG emissions level targets to be achieved by 2030 and 2040.
3. State the intent of the Legislature for the Legislature and appropriate agencies to adopt complementary policies that ensure long-term emissions reductions to advance:
  - a. Job growth and local economic benefits in California;
  - b. Public health benefits for California residents, particularly in disadvantaged communities;
  - c. Innovation in technology and energy, water, and resource management practices; and
  - d. Regional and international collaboration to adopt similar GHG emissions reduction policies.

**Impacts on SCAQMD’s mission, operations or initiatives:** This bill is in line with the District’s policy priorities regarding reducing GHG, criteria pollutant and toxic emissions within the South Coast region. Through a concentrated effort to reduce GHG emissions, there will be numerous co-benefit reductions in criteria and toxic emissions that will help protect the health of South Coast residents and meet state and federal ambient air quality standards. The bill specifically identifies the need to benefit public health and puts an important emphasis on environmental justice concerns, which would greatly benefit the numerous residents within the South Coast region who are disproportionately impacted by localized criteria pollutant and toxic emissions. In addition, the bill is consistent with the District’s priority to advance innovations in clean transportation technology.

**The District recommends adding two amendments to the current bill language:**

- In the proposed Health and Safety Code Section 38550 (b) (2) on page 2, line 24, before the period, add “and which are adequate to simultaneously achieve national ambient air quality standards by the applicable deadlines.”

- In the proposed Health and Safety Code Sect. 38551 (d), on page 3, line 4, before the comma, add “including criteria and toxics emissions reductions.”

**Recommended Position: SUPPORT WITH AMENDMENTS**

**Introduced by Senator Pavley**December 1, 2014

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An act to amend Sections 38550 and 38551 of the Health and Safety Code, relating to greenhouse gases.

## LEGISLATIVE COUNSEL'S DIGEST

SB 32, as introduced, Pavley. California Global Warming Solutions Act of 2006: emissions limit.

The California Global Warming Solutions Act of 2006 designates the State Air Resources Board as the state agency charged with monitoring and regulating sources of emissions of greenhouse gases. The state board is required to adopt a statewide greenhouse gas emissions limit equivalent to the statewide greenhouse gas emissions level in 1990 to be achieved by 2020 and to adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective greenhouse gas emissions reductions.

This bill would require the state board to approve a statewide greenhouse gas emission limit that is equivalent to 80% below the 1990 level to be achieved by 2050, as specified. The bill would authorize the state board to adopt interim greenhouse gas emissions level targets to be achieved by 2030 and 2040. The bill also would state the intent of the Legislature for the Legislature and appropriate agencies to adopt complementary policies that ensure long-term emissions reductions advance specified criteria.

Vote: majority. Appropriation: no. Fiscal committee: yes.  
State-mandated local program: no.

*The people of the State of California do enact as follows:*

1 SECTION 1. Section 38550 of the Health and Safety Code is  
2 amended to read:

3 38550. (a) By January 1, 2008, the state board shall, after one  
4 or more public workshops, with public notice, and an opportunity  
5 for all interested parties to comment, determine what the statewide  
6 greenhouse gas emissions level was in 1990, and approve in a  
7 public hearing, a statewide greenhouse gas emissions limit that is  
8 equivalent to that level, to be achieved by 2020. In order to ensure  
9 the most accurate determination feasible, the state board shall  
10 evaluate the best available scientific, technological, and economic  
11 information on greenhouse gas emissions to determine the 1990  
12 level of greenhouse gas emissions.

13 (b) (1) *Notwithstanding subdivision (a), the state board shall*  
14 *approve in a public hearing a statewide greenhouse gas emissions*  
15 *limit that is equivalent to 80 percent below the 1990 level, as*  
16 *determined pursuant to subdivision (a) or Section 39730, to be*  
17 *achieved by 2050 based on the best available scientific,*  
18 *technological, and economic assessments. The greenhouse gas*  
19 *emissions limit shall include short-lived climate pollutants, as*  
20 *defined in Chapter 4.2 (commencing with Section 39730) of Part*  
21 *2 of Division 26.*

22 (2) *The state board also may approve interim greenhouse gas*  
23 *emissions level targets to be achieved by 2030 and 2040 consistent*  
24 *with paragraph (1).*

25 SEC. 2. Section 38551 of the Health and Safety Code is  
26 amended to read:

27 38551. (a) The statewide greenhouse gas emissions limit shall  
28 remain in effect unless otherwise amended or repealed.

29 (b) It is the intent of the Legislature that the 2050 statewide  
30 greenhouse gas emissions limit *established pursuant to Section*  
31 *38550* continue in existence and be used to maintain and continue  
32 reductions in emissions of greenhouse gases beyond-2020: 2050.

33 (c) The state board shall make recommendations to the Governor  
34 and the Legislature on how to continue reductions of greenhouse  
35 gas emissions beyond-2020: 2050.

36 (d) *In implementing subdivision (b) of Section 38550, it is the*  
37 *intent of the Legislature for the Legislature and appropriate*  
38 *agencies to adopt complementary policies that ensure long-term*

- 1 *emissions reductions adopted pursuant to subdivision (b) of Section*  
2 *38550 advance all of the following:*  
3 *(1) Job growth and local economic benefits in California.*  
4 *(2) Public health benefits for California residents, particularly*  
5 *in disadvantaged communities.*  
6 *(3) Innovation in technology and energy, water, and resource*  
7 *management practices.*  
8 *(4) Regional and international collaboration to adopt similar*  
9 *greenhouse gas emissions reduction policies.*

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## **ATTACHMENT 3b**

### **AB 156 (Perea)**

#### California Global Warming Solutions Act of 2006: Investment Plan

**Summary:** This bill would require the California Department of Finance (Finance) to include in the 3-year investment plan for moneys deposited in the Greenhouse Gas Reduction Fund (GHG Reduction Fund), a funding allocation to provide technical assistance to disadvantaged communities to assist them in proposing projects for inclusion in the 3-year investment plan.

**Background:** The California Global Warming Solutions Act of 2006 (AB 32) designates the State Air Resources Board (ARB) as the state agency charged with monitoring and regulating sources of emissions of greenhouse gases (GHG). ARB is required to adopt a statewide GHG emissions limit equivalent to the statewide GHG emissions level in 1990, to be achieved by 2020. AB 32 authorizes ARB to include the use of market-based compliance mechanisms. Existing law requires all moneys, except for fines and penalties, collected by ARB from the auction or sale of allowances as part of a market-based compliance mechanism to be deposited in the GHG Reduction Fund and to be available upon appropriation. Existing law requires the California Environmental Protection Agency to identify disadvantaged communities and requires Finance, in consultation with ARB and any other relevant state agency, to develop a 3-year investment plan for the moneys deposited in the GHG Reduction Fund.

**Status:** 2/2/15 - Referred to Assembly Com. on Nat. Res.

**Specific Provisions:** Specifically, this bill would:

1. Require Finance to include in the 3-year investment plan (for moneys deposited in the GHG Reduction Fund), a funding allocation to provide technical assistance to disadvantaged communities to assist them in proposing projects for inclusion in the 3-year investment plan.
2. Prevent the allocation of technical assistance moneys for disadvantaged communities to be counted against other required allocations of funding from the GHG Reduction Fund for projects that provide benefits to and that are located in environmental justice communities.

**Impacts on SCAQMD's mission, operations or initiatives:** This bill would provide funding to underprivileged communities for technical assistance in developing GHG emission reducing projects eligible to receive GHG Reduction Fund moneys. This money would be for projects that provide benefits to and that are located in environmental justice communities. The bill's intent is consistent with District policy priorities because these

types of GHG projects would potentially provide co-benefit emission reductions in criteria pollutant and toxic air contaminant emissions within the South Coast region. The District is focused on helping to protect the health of South Coast residents, especially those living within and near environmental justice communities. This bill would likely benefit numerous residents within the South Coast region who are disproportionately impacted by localized criteria pollutant and toxic emissions.

**Recommended Position: SUPPORT**



**ASSEMBLY BILL**

**No. 156**

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**Introduced by Assembly Member Perea**

January 20, 2015

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An act to amend Section 39713 of the Health and Safety Code, relating to greenhouse gases.

LEGISLATIVE COUNSEL'S DIGEST

AB 156, as introduced, Perea. California Global Warming Solutions Act of 2006: investment plan.

The California Global Warming Solutions Act of 2006 designates the State Air Resources Board as the state agency charged with monitoring and regulating sources of emissions of greenhouse gases. The state board is required to adopt a statewide greenhouse gas emissions limit equivalent to the statewide greenhouse gas emissions level in 1990 to be achieved by 2020. The act authorizes the state board to include the use of market-based compliance mechanisms. Existing law requires all moneys, except for fines and penalties, collected by the state board from the auction or sale of allowances as part of a market-based compliance mechanism to be deposited in the Greenhouse Gas Reduction Fund and to be available upon appropriation. Existing law requires the California Environmental Protection Agency to identify disadvantaged communities and requires the Department of Finance, in consultation with the state board and any other relevant state agency, to develop, as specified, a 3-year investment plan for the moneys deposited in the Greenhouse Gas Reduction Fund.

This bill would require the department to include in the 3-year investment plan an allocation to provide technical assistance to

disadvantaged communities to assist them in proposing specified projects for inclusion in the 3-year investment plan.

Vote: majority. Appropriation: no. Fiscal committee: yes.  
State-mandated local program: no.

*The people of the State of California do enact as follows:*

1 SECTION 1. Section 39713 of the Health and Safety Code is  
2 amended to read:

3 39713. (a) The investment plan developed and submitted to  
4 the Legislature, pursuant to Section 39716, shall allocate a  
5 minimum of 25 percent of the available moneys in the fund to  
6 projects that provide benefits to communities described in Section  
7 39711.

8 (b) The investment plan shall allocate a minimum of 10 percent  
9 of the available moneys in the fund to projects located within  
10 communities described in Section 39711.

11 (c) The allocation pursuant to subdivision (b) may be, but need  
12 not be, for projects included, in whole or in part, in the set of  
13 projects supported by the allocation described in subdivision (a).

14 (d) *The investment plan shall allocate from the available moneys*  
15 *in the fund technical assistance moneys to assist the communities*  
16 *described in Section 39711 in proposing projects described in this*  
17 *section. That allocation of technical assistance moneys shall not*  
18 *be used to satisfy the requirements of subdivisions (a) and (b).*

## **ATTACHMENT 3c**

### **Assembly Bill 14 (Waldron)** **Unmanned Aircraft:Task Force**

**Summary:** Assembly Bill 14 will create the Unmanned Aircraft Systems Task Force. The task force will be responsible for formulating a comprehensive plan within the Federal Aviation Administration (FAA) guidelines for operation of unmanned aircraft systems (drones) in California.

**Background:** Improved technologies for small unmanned aircraft systems and their expanding commercial and scientific use have raised privacy and Fourth Amendment search and seizure concerns over their expanding use. Currently, the FAA Modernization and Reform Act of 2012, provides for the integration of civil unmanned aircraft systems into the national airspace system by September 30, 2015. Existing federal law requires the Administrator of the FAA to develop and implement operational and certification requirements for the operation of public unmanned aircraft systems in the national airspace system by December 31, 2015.

**Status:** 1/22/15 Referred to Coms. on PUB. S. and P. & C.P.

#### **Related Legislation:**

AB 56 (Quirk) and AB 37 (Campos) are virtually identical bills narrowly restricting the use of drones by law enforcement and regulatory agencies except under very narrow circumstances. SB 142 (Jackson) specifies that entering the navigable airspace and the collection of data over private property is trespass

**Specific Provisions:** This bill would create the Unmanned Aircraft Task Force. The task force would be responsible for formulating a comprehensive plan for state regulation of unmanned aircraft. The task force would be required to submit, among other things, a comprehensive policy draft and suggested legislation pertaining to unmanned aircraft to the Legislature and the Governor on or before January 1, 2018. The bill would provide that these provisions are repealed on January 1, 2022.

The task force shall operate for two years, until January 1, 2018 and shall formulate a comprehensive plan for state regulation of unmanned aircraft, including, but not limited to, all of the following:

- (1) Reviewing regulations and guidance from the FAA regarding unmanned aircraft and incorporating them into a state policy draft.
- (2) Providing written recommendations, together with suggested legislation, for a comprehensive state policy for unmanned aircraft that protects privacy and allows the use of unmanned aircraft for public and private applications.
- (3) Evaluating complaints and concerns that are expressed to the task force regarding the use of unmanned aircraft.

- (4) Studying the private use of unmanned aircraft to encourage development of the unmanned aircraft industry in the private sector.
- (5) Studying and making recommendations with respect to ensuring that unmanned aircraft users comply with applicable laws, and assessing implementation plans and results.

The task force may meet as frequently as necessary to carry out its responsibilities.

(b) The members of the task force shall serve without compensation, but shall receive a per diem of one hundred dollars (\$100) and reimbursement for actual and necessary expenses incurred in connection with the performance of their duties.

The task force shall consist of 10 members, as follows, who shall serve a two-year term:

- (a) The Adjutant General of the Military Department, or his or her designee, shall be an ex officio member of the task force.
- (b) Three members appointed by the Governor:
  - (1) A member representing the California University System.
  - (2) A member representing agriculture.
  - (3) A member from the Governor’s economic development group.
- (c) Three members appointed by the Senate Committee on Rules:
  - (1) A member representing the aerospace industry.
  - (2) A member representing the Academy of Model Aeronautics.
  - (3) A member representing law enforcement.
- (d) Three members appointed by the Speaker of the Assembly:
  - (1) A member representing business and industry.
  - (2) Two public members who have participated in the unmanned aircraft industry and who have experience operating unmanned aircraft.

**Operational Impacts on SCAQMD:**

Rapidly improving drone technology is creating opportunities for academic research as well as regional planning efforts. For air districts and other regulatory agencies it will allow for safer, more efficient monitoring under routine compliance checks and particularly under more critical and potentially emergency situations. As this technology continues to expand, regulatory agencies should be allowed to use the latest technology in its monitoring and inspection efforts consistent with their current authority but only insofar as it relates to their respective core missions. Historically, Fourth Amendment case law has made a distinction between the use of information collected for criminal prosecution versus regulatory enforcement. Moreover, California Health and Safety Code Section 41510 expressly grants air districts, upon proper notice, “the right of entry to any premises on which an air pollution emission source is located for the purpose of inspecting such source, including securing samples of emissions therefrom.” To properly develop the state’s drone policy, the task force should include representatives from air districts and other regulatory agencies as well research universities and regional planning organizations.

**Recommended Position:** SUPPORT IF AMENDED

**Support:** None on file

**Opposition:** None on file

***February 13, 2014 Legislative Committee Action:***

*After presentation of the three unmanned drone bills (AB 14, AB 37, and AB 56), the Committee tabled taking a position on these items pending a memo outlining federal action on the issue and the specific relevance of unmanned drones for SCAQMD.*

**ASSEMBLY BILL**

**No. 14**

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**Introduced by Assembly Member Waldron**

December 1, 2014

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An act to add and repeal Title 24 (commencing with Section 110050) of the Government Code, relating to unmanned aircraft.

LEGISLATIVE COUNSEL'S DIGEST

AB 14, as introduced, Waldron. Unmanned aircraft: task force.

Existing federal law, the Federal Aviation Administration Modernization and Reform Act of 2012, provides for the integration of civil unmanned aircraft systems, commonly known as drones, into the national airspace system by September 30, 2015. Existing federal law requires the Administrator of the Federal Aviation Administration to develop and implement operational and certification requirements for the operation of public unmanned aircraft systems in the national airspace system by December 31, 2015.

This bill would create the Unmanned Aircraft Task Force. The task force would be responsible for formulating a comprehensive plan for state regulation of unmanned aircraft. The task force would be required to submit, among other things, a comprehensive policy draft and suggested legislation pertaining to unmanned aircraft to the Legislature and the Governor on or before January 1, 2018. The bill would provide that these provisions are repealed on January 1, 2022.

Vote: majority. Appropriation: no. Fiscal committee: yes.  
State-mandated local program: no.

*The people of the State of California do enact as follows:*

1 SECTION 1. Title 24 (commencing with Section 110050) is  
2 added to the Government Code, to read:

3

4

TITLE 24. UNMANNED AIRCRAFT TASK FORCE

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6 110050. (a) The Legislature finds and declares that there is a  
7 need for California to have in place a comprehensive policy for  
8 the operation of unmanned aircraft, and a desire to work within  
9 the guidelines of the Federal Aviation Administration (FAA) as  
10 they are put in place.

11 (b) It is the intent of the Legislature in enacting this title that  
12 the task force created by this act formulate a comprehensive plan  
13 for the state regarding unmanned aircraft.

14 110051. (a) There is hereby created the Unmanned Aircraft  
15 Task Force which shall operate for two years, until January 1,  
16 2018.

17 (b) The task force shall formulate a comprehensive plan for  
18 state regulation of unmanned aircraft, including, but not limited  
19 to, all of the following:

20 (1) Reviewing regulations and guidance from the FAA regarding  
21 unmanned aircraft and incorporating them into a state policy draft.

22 (2) Providing written recommendations, together with suggested  
23 legislation, for a comprehensive state policy for unmanned aircraft  
24 that protects privacy and allows the use of unmanned aircraft for  
25 public and private applications.

26 (3) Evaluating complaints and concerns that are expressed to  
27 the task force regarding the use of unmanned aircraft.

28 (4) Studying the private use of unmanned aircraft to encourage  
29 development of the unmanned aircraft industry in the private sector.

30 (5) Studying and making recommendations with respect to  
31 ensuring that unmanned aircraft users comply with applicable laws,  
32 and assessing implementation plans and results.

33 110052. (a) Any written recommendations, suggested  
34 legislation, or other drafts or documents required to be prepared  
35 pursuant to Section 110051 shall be submitted to the Legislature  
36 and the Governor on or before January 1, 2018.

37 (b) The materials described in subdivision (a) shall be submitted  
38 in compliance with Section 9795.

1 110053. The task force shall consist of 10 members, as follows,  
2 who shall serve a two-year term:

3 (a) The Adjutant General of the Military Department, or his or  
4 her designee, shall be an ex officio member of the task force.

5 (b) Three members appointed by the Governor:

6 (1) A member representing the California University System.

7 (2) A member representing agriculture.

8 (3) A member from the Governor’s economic development  
9 group.

10 (c) Three members appointed by the Senate Committee on  
11 Rules:

12 (1) A member representing the aerospace industry.

13 (2) A member representing the Academy of Model Aeronautics.

14 (3) A member representing law enforcement.

15 (d) Three members appointed by the Speaker of the Assembly:

16 (1) A member representing business and industry.

17 (2) Two public members who have participated in the unmanned  
18 aircraft industry and who have experience operating unmanned  
19 aircraft.

20 110054. (a) The task force may meet as frequently as necessary  
21 to carry out its responsibilities.

22 (b) The members of the task force shall serve without  
23 compensation, but shall receive a per diem of one hundred dollars  
24 (\$100) and reimbursement for actual and necessary expenses  
25 incurred in connection with the performance of their duties.

26 110055. The task force may appoint an executive director, who  
27 may employ staff upon approval by the task force.

28 110056. The task force shall be funded by an appropriation in  
29 the annual Budget Act.

30 110097. This title shall remain in effect only until January 1,  
31 2022, and as of that date is repealed, unless a later enacted statute,  
32 that is enacted before January 1, 2022, deletes or extends that date.



## **ATTACHMENT 3d**

### **Assembly Bill 37 (Campos)** Unmanned Aircraft Systems

**Summary:** Assembly Bill 37 would generally restrict the use of, or contracting the use of unmanned aircraft systems (also known as drones) by government officials; banning the use of drones for law enforcement without a warrant based on probable cause. Under this bill, other governmental agencies will be prohibited to use or to contract the use of drones unless such technology is necessary to conduct the agency's core mission; and provided the purpose is unrelated to gathering criminal or enforcement information; and the agency complies with the public noticing, data collection, and data retention requirements.

**Background:** Improved technologies for small unmanned aircraft systems and their expanding commercial and scientific use have raised privacy and Fourth Amendment search and seizure concerns over their expanding use. Currently, the FAA Modernization and Reform Act of 2012, provides for the integration of civil unmanned aircraft systems into the national airspace system by September 30, 2015. Existing federal law requires the Administrator of the FAA to develop and implement operational and certification requirements for the operation of public unmanned aircraft systems in the national airspace system by December 31, 2015.

**Status:** 1/22/15 Referred to Coms. on PUB. S. and P. & C.P.

**Specific Provisions:** The bill regulates the use of drones by law enforcement and public agencies and the dissemination and use of any images, data and footage obtained by those systems. (SCAQMD would be considered a law enforcement agency.)

Specifically, the bill does the following:

- Requires law enforcement to obtain a warrant to use a drone (bill allows for exemptions such as an emergency situation where there is imminent threat to life or potential for great bodily harm, or to determine the appropriate response to an environmental emergency);
- Allows public agencies to use drones for the purposes of achieving the core mission of the agency;
- Prohibits any entity from equipping or arming drones with weapons or other instruments intended to cause bodily harm;
- Data captured by a drone, with some exceptions, cannot be retained by the agency for more than 1 year;
- Restricts the usage and dissemination of images and data captured by a non-law enforcement public agency;

- Requires a public agency that wishes to use a drone to first provide reasonable notice to the public;
- Drone-collected data by law enforcement shall be subject to public disclosure (Public Records Act), unless the data was collected pursuant to a warrant or is part of a pending criminal investigation; and
- Allows a local agency to adopt more restrictive drone policies

**Operational Impacts on SCAQMD:** Rapidly improving drone technology is creating opportunities for air districts and other regulatory agencies to have safer, more efficient monitoring under routine compliance checks and particularly under more critical and potentially emergency situations. As this technology continues to expand, regulatory agencies should be allowed to use the latest technology in its monitoring and inspection efforts consistent with their current authority and constitutional requirements, but only insofar as it relates to their perspective core missions. Historically, Fourth Amendment case law has made a distinction between the uses of information collected for criminal prosecution versus regulatory enforcement. Moreover, California Health and Safety Code Section 41510 expressly grant air districts, upon proper notice, “the right of entry to any premises on which an air pollution emission source is located for the purpose of inspecting such source, including securing samples of emissions therefrom.” While the SCAQMD and other air districts may be required to obtain an inspection warrant if the right of entry is refused, the standard for obtaining such a warrant is not the same as criminal probable cause, and the bill should be amended to reflect the proper standard. “Cause” for issuance of an inspection warrant exists if “either reasonable legislative or administrative standards for conducting a routine or area inspection are satisfied, or there is reason to believe that a condition of nonconformity exists with respect to the particular place, dwelling, structure, premises, or vehicle.” Cal. Code Civ. Pro. Section 1822.52.

The bill would require SCAQMD to obtain a warrant based on reasonable cause to use a drone in non-emergency situations, and SCAQMD would not be able to provide images captured by a drone to the Attorney General or a District Attorney if we referred enforcement cases to them for action. In addition, the one year limitation on data collected by a drone severely curtails its usefulness for scientific, regional planning, and regulatory enforcement purposes.

**Related Legislation:** In all relevant portions, AB 37 is virtually identical to AB 56 (Quirk) and both bills repeat the same relevant language from AB 1327 (Gorell). That bill was passed by the Legislature in 2014 and vetoed by Governor Brown with the following message:

“There are undoubtedly circumstances where a warrant is appropriate. The bill’s exceptions however, appear to be too narrow and could impose requirements beyond what is required by the 4<sup>th</sup> Amendment or the privacy provisions in the California Constitution.”

**Recommended Position:** WORK WITH AUTHOR to more narrowly tailor the bill to be consistent with constitutional and statutory authorities and to expand the time which the data collected could be used for scientific, planning, and enforcement purposes.

**Support:** None on file

**Opposition:** None on file

***February 13, 2014 Legislative Committee Action:***

*After presentation of the three unmanned drone bills (AB 14, AB 37, and AB 56), the Committee tabled taking a position on these items pending a memo outlining federal action on the issue and the specific relevance of unmanned drones for SCAQMD.*

**ASSEMBLY BILL**

**No. 37**

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**Introduced by Assembly Member Campos**

December 1, 2014

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An act to add Section 6254.31 to the Government Code, and to add Title 14 (commencing with Section 14350) to Part 4 of the Penal Code, relating to unmanned aircraft systems.

LEGISLATIVE COUNSEL'S DIGEST

AB 37, as introduced, Campos. Unmanned aircraft systems.

Existing federal law, the Federal Aviation Administration Modernization and Reform Act of 2012, provides for the integration of civil unmanned aircraft systems, commonly known as drones, into the national airspace system by September 30, 2015. Existing federal law requires the Administrator of the Federal Aviation Administration to develop and implement operational and certification requirements for the operation of public unmanned aircraft systems in the national airspace system by December 31, 2015.

This bill would generally prohibit public agencies from using unmanned aircraft systems, or contracting for the use of unmanned aircraft systems, as defined, with certain exceptions applicable to law enforcement agencies and in certain other cases, including when the use or operation of the unmanned aircraft system achieves the core mission of the agency and the purpose is unrelated to the gathering of criminal intelligence, as defined.

The bill would require reasonable public notice to be provided by public agencies intending to deploy unmanned aircraft systems, as specified. The bill would require images, footage, or data obtained through the use of an unmanned aircraft system under these provisions

to be permanently destroyed within one year, except as specified. The bill would generally prohibit images, footage, or data obtained through the use of an unmanned aircraft system under these provisions from being disseminated outside the collecting public agency, except as specified. Unless authorized by federal law, the bill would prohibit a person or entity, including a public agency subject to these provisions, or a person or entity under contract to a public agency, for the purpose of that contract, from equipping or arming an unmanned aircraft system with a weapon or other device that may be carried by or launched from an unmanned aircraft system and that is intended to cause bodily injury or death, or damage to, or the destruction of, real or personal property. The bill would also provide that specified surveillance restrictions on electronic devices apply to the use or operation of an unmanned aircraft system by a public agency.

The bill would apply its provisions to all public and private entities when contracting with a public agency for the use of an unmanned aircraft system.

Existing law, the California Public Records Act, requires state and local agencies to make public records available for inspection, subject to certain exceptions.

This bill would make certain images, footage, or data obtained through the use of an unmanned aircraft system under its provisions, or any related record, including, but not limited to, usage logs or logs that identify any person or entity that subsequently obtains or requests records of that system, subject to disclosure. The bill would except from disclosure above images, footage, data, and records obtained through the use of an unmanned aircraft system, if disclosure would endanger the safety of a person involved in an investigation, or would endanger the successful completion of the investigation.

Existing constitutional provisions require that a statute that limits the right of access to the meetings of public bodies or the writings of public officials and agencies be adopted with findings demonstrating the interest protected by the limitation and the need for protecting that interest.

This bill would make legislative findings to that effect.

Vote: majority. Appropriation: no. Fiscal committee: yes.  
State-mandated local program: no.

*The people of the State of California do enact as follows:*

1 SECTION 1. Section 6254.31 is added to the Government  
2 Code, to read:

3 6254.31. (a) Notwithstanding any provision of this chapter,  
4 images, footage, or data obtained through the use of an unmanned  
5 aircraft system pursuant to Title 14 (commencing with Section  
6 14350) of Part 4 of the Penal Code, or any related record, including,  
7 but not limited to, usage logs or logs that identify any person or  
8 entity that subsequently obtains or requests records of that system,  
9 are public records subject to disclosure.

10 (b) Notwithstanding subdivision (a), nothing in this chapter or  
11 any other law requires the disclosure of images, footage, or data  
12 obtained through the use of an unmanned aircraft system, or any  
13 related record, including, but not limited to, usage logs or logs that  
14 identify any person or entity that subsequently obtains or requests  
15 records of that system, to the extent that disclosure of the images,  
16 footage, data, or records would endanger the safety of a person  
17 involved in an investigation, or would endanger the successful  
18 completion of the investigation.

19 SEC. 2. Title 14 (commencing with Section 14350) is added  
20 to Part 4 of the Penal Code, to read:

21

22 TITLE 14. UNMANNED AIRCRAFT SYSTEMS

23

24 14350. (a) A public agency shall not use an unmanned aircraft  
25 system, or contract for the use of an unmanned aircraft system,  
26 except as provided in this title. This title shall apply to all public  
27 and private entities when contracting with a public agency for the  
28 use of an unmanned aircraft system.

29 (b) A law enforcement agency may use an unmanned aircraft  
30 system if it has obtained a warrant based on probable cause  
31 pursuant to this code.

32 (c) A law enforcement agency, without obtaining a warrant,  
33 may use an unmanned aircraft system in all of the following  
34 circumstances:

35 (1) In emergency situations if there is an imminent threat to life  
36 or of great bodily harm, including, but not limited to, fires, hostage  
37 crises, "hot pursuit" situations if reasonably necessary to prevent

1 harm to law enforcement officers or others, and search and rescue  
2 operations on land or water.

3 (2) To assess the necessity of first responders in situations  
4 relating to traffic accidents.

5 (3) (A) To inspect state parks and wilderness areas for illegal  
6 vegetation or fires.

7 (B) For purposes of this paragraph, “wilderness areas” means  
8 public lands without permanent improvements or human habitation.

9 (4) To determine the appropriate response to an imminent or  
10 existing environmental emergency or disaster, including, but not  
11 limited to, oils spills or chemical spills.

12 (d) A public agency other than a law enforcement agency may  
13 use an unmanned aircraft system, or contract for the use of an  
14 unmanned aircraft system, to achieve the core mission of the  
15 agency provided that the purpose is unrelated to the gathering of  
16 criminal intelligence.

17 (e) A public agency that is not primarily a law enforcement  
18 agency, but that employs peace officers or performs functions  
19 related to criminal investigations, may use an unmanned aircraft  
20 system without obtaining a warrant to achieve the core mission of  
21 the agency provided that the purpose is unrelated to the gathering  
22 of criminal intelligence, and that the images, footage, or data are  
23 not used for any purpose other than that for which it was collected.

24 14351. A public agency that uses an unmanned aircraft system,  
25 or contracts for the use of an unmanned aircraft system, pursuant  
26 to this title shall first provide reasonable notice to the public.  
27 Reasonable notice shall, at a minimum, consist of a one-time  
28 announcement regarding the agency’s intent to deploy unmanned  
29 aircraft system technology and a description of the technology’s  
30 capabilities.

31 14352. (a) (1) (A) Except as permitted by this title, images,  
32 footage, or data obtained by a public agency, or any entity  
33 contracting with a public agency, pursuant to this title shall not be  
34 disseminated to a law enforcement agency unless the law  
35 enforcement agency has obtained a warrant for the images, footage,  
36 or data based on probable cause pursuant to this code, or the law  
37 enforcement agency would not have been required to obtain a  
38 warrant to collect the images, footage, or data itself, as specified  
39 in Section 14350.

1 (B) A public agency that is not primarily a law enforcement  
2 agency, but that employs peace officers or performs functions  
3 related to criminal investigations, may disseminate images, footage,  
4 or data collected pursuant to Section 14350 if the dissemination  
5 is to others within that agency.

6 (2) Except as permitted by this title, images, footage, or data  
7 obtained by a public agency, or any entity contracting with a public  
8 agency, through the use of an unmanned aircraft system shall not  
9 be disseminated outside the collecting public agency, unless one  
10 of the following circumstances applies:

11 (A) Images, footage, or data obtained by a public agency through  
12 the use of an unmanned aircraft system may be disseminated to  
13 another public agency that is not a law enforcement agency if the  
14 images, footage, or data are related to the core mission of both  
15 public agencies involved in the sending or receiving of the images,  
16 footage, or data.

17 (B) Images, footage, or data obtained by a public agency through  
18 the use of an unmanned aircraft system may be disseminated  
19 outside the collecting public agency if the images, footage, or data  
20 are evidence in any claim filed or any pending litigation.

21 (C) Images, footage, or data obtained by a public agency through  
22 the use of an unmanned aircraft system may be disseminated to a  
23 private entity if both of the following conditions are satisfied:

24 (i) The collecting public agency is not a law enforcement  
25 agency.

26 (ii) The images, footage, or data are related to the core function  
27 of the collecting public agency.

28 (3) A public agency may make available to the public images,  
29 footage, or data obtained by the public agency through the use of  
30 an unmanned aircraft system if both of the following conditions  
31 are satisfied:

32 (A) The images, footage, or data do not depict or describe any  
33 individual or group of individuals, or the activities of any individual  
34 or group of individuals whose identity or identities can be  
35 ascertained.

36 (B) The disclosure of the images, footage, or data is required  
37 to fulfill the public agency's statutory or mandatory obligations.

38 (b) Except as permitted by this title, images, footage, or data  
39 obtained by a public agency through the use of an unmanned



1 aircraft system shall not be used by the public agency for any  
2 purpose other than that for which it was collected.

3 (c) (1) Images, footage, or data obtained through the use of an  
4 unmanned aircraft system shall be permanently destroyed within  
5 one year, except that a public agency may retain the images,  
6 footage, or data in all of the following circumstances:

7 (A) For training purposes. Images, footage, or data retained for  
8 training purposes shall be used only for the education and  
9 instruction of a public agency’s employees in matters related to  
10 the mission of the public agency and for no other purpose.

11 (B) For academic research or teaching purposes. Images,  
12 footage, or data retained for academic research or teaching purposes  
13 shall be used only for the advancement of research and teaching  
14 conducted by an academic or research institution and matters  
15 related to the mission of the institution and for no other purpose.

16 (C) For purposes of monitoring material assets owned by the  
17 public agency.

18 (D) For environmental, public works, or land use management  
19 or planning by the public agency.

20 (2) Notwithstanding paragraph (1), a public agency may retain  
21 beyond one year images, footage, or data obtained through the use  
22 of an unmanned aircraft system in both of the following  
23 circumstances:

24 (A) If a warrant authorized the collection of the images, footage,  
25 or data.

26 (B) If the images, footage, or data are evidence in any claim  
27 filed or any pending litigation or enforcement proceeding.

28 14353. Unless authorized by federal law, a person or entity,  
29 including a public agency subject to Section 14350 or a person or  
30 entity under contract to a public agency, for the purpose of that  
31 contract, shall not equip or arm an unmanned aircraft system with  
32 a weapon or other device that may be carried by or launched from  
33 an unmanned aircraft system and that is intended to cause bodily  
34 injury or death, or damage to, or the destruction of, real or personal  
35 property.

36 14354. All unmanned aircraft systems shall be operated so as  
37 to minimize the collection of images, footage, or data of persons,  
38 places, or things not specified with particularity in the warrant  
39 authorizing the use of an unmanned aircraft system, or, if no

1 warrant was obtained, for purposes unrelated to the justification  
2 for the operation.

3 14355. (a) This title is not intended to conflict with or  
4 supersede federal law, including rules and regulations of the  
5 Federal Aviation Administration.

6 (b) A local legislative body may adopt more restrictive policies  
7 on the acquisition or use of unmanned aircraft systems.

8 14356. For the purposes of this title, the following definitions  
9 shall apply:

10 (a) “Criminal intelligence” means information compiled,  
11 analyzed, or disseminated in an effort to anticipate, prevent,  
12 monitor, or investigate criminal activity.

13 (b) “Law enforcement agency” means the Attorney General of  
14 the State of California, each district attorney, and each agency of  
15 the State of California authorized by statute to investigate or  
16 prosecute law violators.

17 (c) “Public agency” means and includes each state agency and  
18 each local agency.

19 (d) “Unmanned aircraft system” means an unmanned aircraft  
20 and associated elements, including communication links and the  
21 components that control the unmanned aircraft, that are required  
22 for the pilot in command to operate safely and efficiently in the  
23 national airspace system.

24 14357. Except as provided in this title, the surveillance  
25 restrictions on electronic devices described in Chapter 1.5  
26 (commencing with Section 630) of Title 15 of Part 1 shall apply  
27 to the use or operation of an unmanned aircraft system by a public  
28 agency.

29 SEC. 3. The Legislature finds and declares that Section 1 of  
30 this act, which adds Section 6254.31 of the Government Code,  
31 imposes a limitation on the public’s right of access to the meetings  
32 of public bodies or the writings of public officials and agencies  
33 within the meaning of Section 3 of Article I of the California  
34 Constitution. Pursuant to that constitutional provision, the  
35 Legislature makes the following findings to demonstrate the interest  
36 protected by this limitation and the need for protecting that interest:

- 1 In order to ensure the safety of persons involved in investigations
- 2 and to preserve the integrity of those investigations, it is necessary
- 3 that this act take effect.

O

## **ATTACHMENT 3e**

### **Assembly Bill 56 (Quirk)** Unmanned Aircraft Systems

**Summary:** This bill would generally restrict the use of, or contracting the use of unmanned aircraft systems (also known as drones) by government officials; banning the use of drones for law enforcement without a warrant based on probable cause. Under this bill, other governmental agencies would be prohibited from using or contracting the use of drones unless such technology is necessary to conduct the agency's core mission, provided the purpose is unrelated to gathering criminal or enforcement information, and the agency complies with the public noticing, data collection, and data retention requirements.

**Background:** Improved technologies for small unmanned aircraft systems and their expanding commercial and scientific use have raised privacy and Fourth Amendment search and seizure concerns over their expanding use. Currently, the FAA Modernization and Reform Act of 2012, provides for the integration of civil unmanned aircraft systems into the national airspace system by September 30, 2015. Existing federal law requires the Administrator of the FAA to develop and implement operational and certification requirements for the operation of public unmanned aircraft systems in the national airspace system by December 31, 2015.

**Status:** 1/22/15 Referred to Coms. on PUB. S. and P. & C.P.

**Specific Provisions:** The bill regulates the use of drones by law enforcement and public agencies and the dissemination and use of any images, data and footage obtained by those systems. (SCAQMD would be considered a law enforcement agency.)

Specifically, the bill does the following:

- Requires law enforcement to obtain a warrant to use a drone (bill allows for exemptions such as an emergency situation where there is imminent threat to life or potential for great bodily harm, or to determine the appropriate response to an environmental emergency);
- Allows public agencies to use drones for the purposes of achieving the core mission of the agency;
- Prohibits any entity from equipping or arming drones with weapons or other instruments intended to cause bodily harm;
- Images captured by a drone, with some exceptions, cannot be retained by the agency for more than 1 year;
- Restricts the usage and dissemination of images and data captured by a non-law enforcement public agency;

- Requires a public agency that wishes to use a drone to first provide reasonable notice to the public;
- Drone-collected data by law enforcement shall be subject to public disclosure (Public Records Act), unless the data was collected pursuant to a warrant or is part of a pending criminal investigation; and
- Allows a local agency to adopt more restrictive drone policies

**Operational Impacts on SCAQMD:** Rapidly improving drone technology is creating opportunities for air districts and other regulatory agencies to have safer, more efficient monitoring under routine compliance checks and particularly under more critical and potentially emergency situations. As this technology continues to expand, regulatory agencies should be allowed to use the latest technology in its monitoring and inspection efforts consistent with their current authority and constitutional requirements, but only insofar as it relates to their respective core missions. Historically, Fourth Amendment case law has made a distinction between the uses of information collected for criminal prosecution versus regulatory enforcement. Moreover, California Health and Safety Code Section 41510 expressly grant air districts, upon proper notice, “the right of entry to any premises on which an air pollution emission source is located for the purpose of inspecting such source, including securing samples of emissions therefrom.” While the SCAQMD and other air districts may be required to obtain an inspection warrant if the right of entry is refused, the standard for obtaining such a warrant is not the same as criminal probable cause, and the bill should be amended to reflect the proper standard. “Cause” for issuance of an inspection warrant exists if “either reasonable legislative or administrative standards for conducting a routine or area inspection are satisfied, or there is reason to believe that a condition of nonconformity exists with respect to the particular place, dwelling, structure, premises, or vehicle.” Cal. Code Civ. Pro. Section 1822.52.

The bill would require SCAQMD to obtain a warrant based on reasonable cause to use a drone in non-emergency situations, and SCAQMD would not be able to provide images captured by a drone to the Attorney General or a District Attorney if we referred enforcement cases to them for action. In addition, the one year limitation on data collected by a drone severely curtails its usefulness for scientific, regional planning, and regulatory enforcement purposes.

**Related Legislation:** In all relevant portions, AB 56 is virtually identical to AB 37 (Campos) and both bills repeat the same relevant language from AB 1327 (Gorell). That bill was passed by the Legislature in 2014 and vetoed by Governor Brown with the following message:

“There are undoubtedly circumstances where a warrant is appropriate. The bill’s exceptions however, appear to be too narrow and could impose requirements beyond what is required by the 4<sup>th</sup> Amendment or the privacy provisions in the California Constitution.”

**Recommended Position:** WORK WITH AUTHOR to more narrowly tailor the bill to be consistent with constitutional and statutory authorities and to expand the time which the data collected could be used for scientific, planning, and enforcement purposes.

**Support:** None on file

**Opposition:** None on file

***February 13, 2014 Legislative Committee Action:***

*After presentation of the three unmanned drone bills (AB 14, AB 37, and AB 56), the Committee tabled taking a position on these items pending a memo outlining federal action on the issue and the specific relevance of unmanned drones for SCAQMD.*

**ASSEMBLY BILL**

**No. 56**

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**Introduced by Assembly Member Quirk**

December 2, 2014

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An act to add Section 6254.31 to the Government Code, and to add Title 14 (commencing with Section 14350) to Part 4 of the Penal Code, relating to unmanned aircraft systems.

LEGISLATIVE COUNSEL'S DIGEST

AB 56, as introduced, Quirk. Unmanned aircraft systems.

Existing federal law, the Federal Aviation Administration Modernization and Reform Act of 2012, provides for the integration of civil unmanned aircraft systems, commonly known as drones, into the national airspace system by September 30, 2015. Existing federal law requires the Administrator of the Federal Aviation Administration to develop and implement operational and certification requirements for the operation of public unmanned aircraft systems in the national airspace system by December 31, 2015.

This bill would generally prohibit public agencies from using unmanned aircraft systems, or contracting for the use of unmanned aircraft systems, as defined, with certain exceptions applicable to law enforcement agencies and in certain other cases, including when the use or operation of the unmanned aircraft system achieves the core mission of the agency and the purpose is unrelated to the gathering of criminal intelligence, as defined.

The bill would require reasonable public notice to be provided by public agencies intending to deploy unmanned aircraft systems, as specified. The bill would require images, footage, or data obtained through the use of an unmanned aircraft system under these provisions

to be permanently destroyed within one year, except as specified. The bill would generally prohibit images, footage, or data obtained through the use of an unmanned aircraft system under these provisions from being disseminated outside the collecting public agency, except as specified. Unless authorized by federal law, the bill would prohibit a person or entity, including a public agency subject to these provisions, or a person or entity under contract to a public agency, for the purpose of that contract, from equipping or arming an unmanned aircraft system with a weapon or other device that may be carried by or launched from an unmanned aircraft system and that is intended to cause bodily injury or death, or damage to, or the destruction of, real or personal property. The bill would also provide that specified surveillance restrictions on electronic devices apply to the use or operation of an unmanned aircraft system by a public agency.

The bill would make its provisions applicable to all public and private entities when contracting with a public agency for the use of an unmanned aircraft system.

Existing law, the California Public Records Act, requires state and local agencies to make public records available for inspection, subject to certain exceptions.

This bill would make certain images, footage, or data obtained through the use of an unmanned aircraft system under its provisions, or any related record, including, but not limited to, usage logs or logs that identify any person or entity that subsequently obtains or requests records of that system, subject to disclosure. The bill would except from the disclosure requirements discussed above images, footage, data, and records obtained through the use of an unmanned aircraft system if disclosure would endanger the safety of a person involved in an investigation, or would endanger the successful completion of the investigation.

Existing constitutional provisions require that a statute that limits the right of access to the meetings of public bodies or the writings of public officials and agencies be adopted with findings demonstrating the interest protected by the limitation and the need for protecting that interest.

This bill would make legislative findings to that effect.

Because this bill would require local entities to comply with additional rules and requirements regarding the use of information obtained from unmanned aircraft systems, it would impose a state-mandated local program.



The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

Vote: majority. Appropriation: no. Fiscal committee: yes.

State-mandated local program: yes.

*The people of the State of California do enact as follows:*

1 SECTION 1. Section 6254.31 is added to the Government  
2 Code, to read:

3 6254.31. (a) Notwithstanding any provision of this chapter,  
4 images, footage, or data obtained through the use of an unmanned  
5 aircraft system pursuant to Title 14 (commencing with Section  
6 14350) of Part 4 of the Penal Code, or any related record, including,  
7 but not limited to, usage logs or logs that identify any person or  
8 entity that subsequently obtains or requests records of that system,  
9 are public records subject to disclosure.

10 (b) Notwithstanding subdivision (a), nothing in this chapter or  
11 any other law requires the disclosure of images, footage, or data  
12 obtained through the use of an unmanned aircraft system, or any  
13 related record, including, but not limited to, usage logs or logs that  
14 identify any person or entity that subsequently obtains or requests  
15 records of that system, to the extent that disclosure of the images,  
16 footage, data, or records would endanger the safety of a person  
17 involved in an investigation, or would endanger the successful  
18 completion of the investigation.

19 SEC. 2. Title 14 (commencing with Section 14350) is added  
20 to Part 4 of the Penal Code, to read:

21

22 TITLE 14. UNMANNED AIRCRAFT SYSTEMS

23

24 14350. (a) A public agency shall not use an unmanned aircraft  
25 system, or contract for the use of an unmanned aircraft system,  
26 except as provided in this title. This title shall apply to all public  
27 and private entities when contracting with a public agency for the  
28 use of an unmanned aircraft system.

1 (b) A law enforcement agency may use an unmanned aircraft  
2 system if it has obtained a warrant based on probable cause  
3 pursuant to this code.

4 (c) A law enforcement agency, without obtaining a warrant,  
5 may use an unmanned aircraft system in all of the following  
6 circumstances:

7 (1) In emergency situations if there is an imminent threat to life  
8 or of great bodily harm, including, but not limited to, fires, hostage  
9 crises, “hot pursuit” situations if reasonably necessary to prevent  
10 harm to law enforcement officers or others, and search and rescue  
11 operations on land or water.

12 (2) To assess the necessity of first responders in situations  
13 relating to traffic accidents.

14 (3) (A) To inspect state parks and wilderness areas for illegal  
15 vegetation or fires.

16 (B) For purposes of this paragraph, “wilderness areas” means  
17 public lands without permanent improvements or human habitation.

18 (4) To determine the appropriate response to an imminent or  
19 existing environmental emergency or disaster, including, but not  
20 limited to, oils spills or chemical spills.

21 (d) A public agency other than a law enforcement agency may  
22 use an unmanned aircraft system, or contract for the use of an  
23 unmanned aircraft system, to achieve the core mission of the  
24 agency provided that the purpose is unrelated to the gathering of  
25 criminal intelligence.

26 (e) A public agency that is not primarily a law enforcement  
27 agency, but that employs peace officers or performs functions  
28 related to criminal investigations, may use an unmanned aircraft  
29 system without obtaining a warrant to achieve the core mission of  
30 the agency provided that the purpose is unrelated to the gathering  
31 of criminal intelligence, and that the images, footage, or data are  
32 not used for any purpose other than that for which it was collected.

33 14351. A public agency that uses an unmanned aircraft system,  
34 or contracts for the use of an unmanned aircraft system, pursuant  
35 to this title shall first provide reasonable notice to the public.  
36 Reasonable notice shall, at a minimum, consist of a one-time  
37 announcement regarding the agency’s intent to deploy unmanned  
38 aircraft system technology and a description of the technology’s  
39 capabilities.

1 14352. (a) (1) (A) Except as permitted by this title, images,  
2 footage, or data obtained by a public agency, or any entity  
3 contracting with a public agency, pursuant to this title shall not be  
4 disseminated to a law enforcement agency unless the law  
5 enforcement agency has obtained a warrant for the images, footage,  
6 or data based on probable cause pursuant to this code, or the law  
7 enforcement agency would not have been required to obtain a  
8 warrant to collect the images, footage, or data itself, as specified  
9 in Section 14350.

10 (B) A public agency that is not primarily a law enforcement  
11 agency, but that employs peace officers or performs functions  
12 related to criminal investigations, may disseminate images, footage,  
13 or data collected pursuant to Section 14350 if the dissemination  
14 is to others within that agency.

15 (2) Except as permitted by this title, images, footage, or data  
16 obtained by a public agency, or any entity contracting with a public  
17 agency, through the use of an unmanned aircraft system shall not  
18 be disseminated outside the collecting public agency, unless one  
19 of the following circumstances applies:

20 (A) Images, footage, or data obtained by a public agency through  
21 the use of an unmanned aircraft system may be disseminated to  
22 another public agency that is not a law enforcement agency if the  
23 images, footage, or data are related to the core mission of both  
24 public agencies involved in the sending or receiving of the images,  
25 footage, or data.

26 (B) Images, footage, or data obtained by a public agency through  
27 the use of an unmanned aircraft system may be disseminated  
28 outside the collecting public agency if the images, footage, or data  
29 are evidence in any claim filed or any pending litigation.

30 (C) Images, footage, or data obtained by a public agency through  
31 the use of an unmanned aircraft system may be disseminated to a  
32 private entity if both of the following conditions are satisfied:

33 (i) The collecting public agency is not a law enforcement  
34 agency.

35 (ii) The images, footage, or data are related to the core function  
36 of the collecting public agency.

37 (3) A public agency may make available to the public images,  
38 footage, or data obtained by the public agency through the use of  
39 an unmanned aircraft system if both of the following conditions  
40 are satisfied:

1 (A) The images, footage, or data do not depict or describe any  
2 individual or group of individuals, or the activities of any individual  
3 or group of individuals whose identity or identities can be  
4 ascertained.

5 (B) The disclosure of the images, footage, or data is required  
6 to fulfill the public agency's statutory or mandatory obligations.

7 (b) Except as permitted by this title, images, footage, or data  
8 obtained by a public agency through the use of an unmanned  
9 aircraft system shall not be used by the public agency for any  
10 purpose other than that for which it was collected.

11 (c) (1) Images, footage, or data obtained through the use of an  
12 unmanned aircraft system shall be permanently destroyed within  
13 one year, except that a public agency may retain the images,  
14 footage, or data in all of the following circumstances:

15 (A) For training purposes. Images, footage, or data retained for  
16 training purposes shall be used only for the education and  
17 instruction of a public agency's employees in matters related to  
18 the mission of the public agency and for no other purpose.

19 (B) For academic research or teaching purposes. Images,  
20 footage, or data retained for academic research or teaching purposes  
21 shall be used only for the advancement of research and teaching  
22 conducted by an academic or research institution and matters  
23 related to the mission of the institution and for no other purpose.

24 (C) For purposes of monitoring material assets owned by the  
25 public agency.

26 (D) For environmental, public works, or land use management  
27 or planning by the public agency.

28 (2) Notwithstanding paragraph (1), a public agency may retain  
29 beyond one year images, footage, or data obtained through the use  
30 of an unmanned aircraft system in both of the following  
31 circumstances:

32 (A) If a warrant authorized the collection of the images, footage,  
33 or data.

34 (B) If the images, footage, or data are evidence in any claim  
35 filed or any pending litigation or enforcement proceeding.

36 14353. Unless authorized by federal law, a person or entity,  
37 including a public agency subject to Section 14350 or a person or  
38 entity under contract to a public agency, for the purpose of that  
39 contract, shall not equip or arm an unmanned aircraft system with  
40 a weapon or other device that may be carried by or launched from

1 an unmanned aircraft system and that is intended to cause bodily  
2 injury or death, or damage to, or the destruction of, real or personal  
3 property.

4 14354. All unmanned aircraft systems shall be operated so as  
5 to minimize the collection of images, footage, or data of persons,  
6 places, or things not specified with particularity in the warrant  
7 authorizing the use of an unmanned aircraft system, or, if no  
8 warrant was obtained, for purposes unrelated to the justification  
9 for the operation.

10 14355. (a) This title is not intended to conflict with or  
11 supersede federal law, including rules and regulations of the  
12 Federal Aviation Administration.

13 (b) A local legislative body may adopt more restrictive policies  
14 on the acquisition or use of unmanned aircraft systems.

15 14356. For the purposes of this title, the following definitions  
16 shall apply:

17 (a) “Criminal intelligence” means information compiled,  
18 analyzed, or disseminated in an effort to anticipate, prevent,  
19 monitor, or investigate criminal activity.

20 (b) “Law enforcement agency” means the Attorney General of  
21 the State of California, each district attorney, and each agency of  
22 the State of California authorized by statute to investigate or  
23 prosecute law violators.

24 (c) “Public agency” means and includes each state agency and  
25 each local agency.

26 (d) “Unmanned aircraft system” means an unmanned aircraft  
27 and associated elements, including communication links and the  
28 components that control the unmanned aircraft, that are required  
29 for the pilot in command to operate safely and efficiently in the  
30 national airspace system.

31 14357. Except as provided in this title, the surveillance  
32 restrictions on electronic devices described in Chapter 1.5  
33 (commencing with Section 630) of Title 15 of Part 1 shall apply  
34 to the use or operation of an unmanned aircraft system by a public  
35 agency.

36 SEC. 3. The Legislature finds and declares that Section 1 of  
37 this act, which adds Section 6254.31 of the Government Code,  
38 imposes a limitation on the public’s right of access to the meetings  
39 of public bodies or the writings of public officials and agencies  
40 within the meaning of Section 3 of Article I of the California

1 Constitution. Pursuant to that constitutional provision, the  
2 Legislature makes the following findings to demonstrate the interest  
3 protected by this limitation and the need for protecting that interest:

4 In order to ensure the safety of persons involved in investigations  
5 and to preserve the integrity of those investigations, it is necessary  
6 that this act take effect.

7 SEC. 4. No reimbursement is required by this act pursuant to  
8 Section 6 of Article XIII B of the California Constitution because  
9 the only costs that may be incurred by a local agency or school  
10 district under this act would result from a legislative mandate that  
11 is within the scope of paragraph (7) of subdivision (b) of Section  
12 3 of Article I of the California Constitution.

## ATTACHMENT 4

### SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

#### LEGISLATIVE REPORT FROM HOME RULE ADVISORY GROUP MEETING OF JANUARY 21, 2015

HRAG members present:

Dr. Joseph Lyou, Chairman

Elaine Chang, SCAQMD

Curt Coleman, Southern California Air Quality Alliance

Jaclyn Ferlita, ClimeCo

Patrick Au on behalf of Chris Gallenstein, CARB (participated by phone)

Bill LaMarr, California Small Business Alliance

Art Montez, AMA International

Diane Moss, Renewables 100 Policy Institute

Rongsheng Luo, SCAG (participated by phone)

Sue Gornick on behalf of Bill Quinn, CCEEB

Terry Roberts, American Lung Association of California (participated by phone)

David Rothbart, Los Angeles County Sanitation Districts

Larry Rubio, Riverside Transit Agency (participated by phone)

Larry Smith, Riverside Cement

TyRon Turner, We Care About You

Lee Wallace, So Cal Gas and SDG&E

Mike Wang, WSPA

AQMD Staff: Barbara Baird, Philip Crabbe, Chris Marlia, William Thompson, and Marilyn Traynor

Others: Mark Abramowitz (Board Consultant to Dr. Lyou); Earl Elrod (Board Consultant to Mayor Yates); Daniel McGivney (SoCalGas/SDG&E); Rita Loof (RadTech).

#### **LEGISLATIVE UPDATE**

Philip Crabbe reported on the following items that were discussed at the Legislative Committee meeting on January 16, 2015:

#### **Federal**

The consultants reported on the new Congressional committee assignments:

Member	New Assignment
Senator Barbara Boxer	Ranking Member on the Senate Environment and Public Works Committee
Congressman Tony Cárdenas	House Energy and Commerce Committee
Congresswoman Julia Brownley	House Transportation and Infrastructure Committee
Congresswoman Mimi Walters	House Judiciary Committee House Transportation and Infrastructure Committee
Congressman Ted Lieu	House Budget Committee

The consultants also reported that:

- SCAQMD staff had productive meetings in Washington D.C. with staff from the offices of Senators Barbara Boxer and Diane Feinstein, as well as staff from the offices of Congressional members Pete Aguilar, Janice Hahn, Ted Lieu, Alan Lowenthal, Norma Torres, and Ken Calvert.
- SCAQMD staff also met with staff from the offices of Senator James Inhofe and key Republican staff for the House Transportation and Infrastructure Committee to discuss transportation-related issues.

The committee discussed the following bill:

Bills	Description	Action
H.R. 5101 (Hahn)	The National Freight Network Trust Fund Act of 2014	Support with recommended amendments.

H.R. 5101 (Hahn)

Staff returned to the Legislative Committee with recommended amendments to set aside a portion of funding included in the bill for air quality purposes. Currently, this bill would transfer five percent of all import duties collected by the U.S. Customs and Border Protections Act to a Freight Network Trust Fund for freight infrastructure improvements, generating approximately \$1.9 billion a year. The Legislative Committee adopted a position of support, with recommended amendments.

Discussion

Mr. Wallace suggested that the HRAG may want to include H.R. 5101 in their 2015 Goals & Objectives as an issue to be discussed by the Freight Sustainability Subcommittee (he was concerned that the program, which is incentive based, lacks enforceable regulatory measures). Dr. Lyou suggested that this issue may be discussed by the AQMP working group; he asked Dr. Chang to determine the best forum for discussing these issues and to report back to the HRAG with a recommendation.

State

The consultants reported as follows:

Governor Jerry Brown announced his intent to increase the state’s renewable energy portfolio to 50% and to reduce the state’s oil consumption by 50%. Assemblymember Anthony Rendon and Senator Mark Leno are considering a 50% renewables bill. On January 1, 2015, fuels came under the cap and trade program for the first time; however, despite concerns, there has been no spike in fuel prices so far. The next cap and trade auction is scheduled for mid February. Although the Governor anticipates \$1 billion in revenues being generated, others expect the amount of revenues generated to be more than twice that. Governor Brown released his January budget proposal for the 2015-2016 session, which will kick off budget negotiations that could



continue until June 15, 2015, which is the constitutional deadline for the Legislature to adopt a budget. The Governor's January budget proposes:

- \$113.3 billion in General Funds with projected growth of \$4 billion through 2016.
- \$2.4 billion for the newly enacted Proposition 2 which was adopted by the voters in November and relates to the state's Budget Stabilization Account--\$1.2 billion will be allocated to pay off debt, and \$1.2 billion will be deposited into the rainy day stabilization account, bringing the state's rainy day account to \$2.8 billion by June 2016.
- \$1 billion in cap and trade revenues which will be invested in high-speed rail, low carbon transportation, sustainable communities, energy efficiencies, and urban forests.

The Governor's budget has been generally well-received, and the Legislative Analyst Office found the budget to be a prudent plan that will help the state to overcome the boom and bust budgeting of the past 20 years. The Legislative Committee was updated on ongoing discussions with CARB, California Air Pollution Control Officers Association, and other stakeholders on the proposed changes to the Carl Moyer Program. The discussions have resulted in "The Five Pillars" policy document which was approved by CARB. The Committee unanimously endorsed "The Five Pillars" to guide SCAQMD's legislative efforts.

### **Discussion**

Mr. Montez asked if funding is available for impacted communities/schools for projects that reduce motor vehicle emissions (e.g. tree planting). Dr. Lyou responded that funding is available through the AB 32 and the Carl Moyer Programs for projects such as urban forestry, fleet vehicle replacement, energy efficiency and demand reduction, renewable energy, infrastructure, affordable housing in the context of transportation, etc. Mr. Montez asked if funding is available for workforce development; he stressed the importance of providing the opportunity to disadvantaged youth for a technical education. Dr. Lyou responded that legislation has been enacted for a pilot program that will allow some California community colleges to offer four-year baccalaureate degrees in technical fields, with the tuition being significantly less than the tuition for Cal State campuses. He added that SCAQMD also has the Board internship program which affords students an opportunity to learn about environmental programs.

BOARD MEETING DATE: March 6, 2015

AGENDA NO. 22

REPORT: Mobile Source Committee

SYNOPSIS: The Mobile Source Committee met on Friday, February 20, 2015. Following is a summary of that meeting. The next Mobile Source Committee meeting is scheduled for Friday, March 20, 2015 at 9:00 a.m.

RECOMMENDED ACTION:  
Receive and file.

Dr. Clark E. Parker, Sr., Chair  
Mobile Source Committee

EC:fmt

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### **Attendance**

Committee Chair Dr. Clark E. Parker, Sr., and Committee Members Ben Benoit and Shawn Nelson attended via videoconference; Committee Members Dr. Joseph Lyou and Judith Mitchell attended the meeting at the SCAQMD Diamond Bar headquarters.

The following items were presented:

### **ACTION ITEM:**

#### **1) Staff Proposed Comments on U.S. EPA's Proposed Ozone Standard**

Dr. Philip Fine, Assistant Deputy Executive Officer /Planning, Rule Development & Area Sources, discussed the draft comment letter prepared by SCAQMD staff regarding the proposed revision to the 8-hour ozone standard. As a way of background, the Clean Air Act (CAA ) requires the U.S. EPA to review National Ambient Air Quality Standards (NAAQS) every five years considering scientific health and air quality information, at-risk groups affected, uncertainties in the data, and advice from the Clean Air Scientific Advisory Committee (CASAC), an independent committee charged with providing guidance to U.S. EPA. The review evaluates whether the current standard is “requisite to protect public health with an adequate margin of safety.”

Dr. Fine outlined the ozone standard development timeline and milestone months starting with June 2007 when U.S. EPA first proposed an 8-hour ozone NAAQS in a range of 70-75 ppb, then finalized at 75 ppb in March 2008. The standard was proposed for revision to a range of 60-70 ppb in January 2010 subsequently it was decided to not finalize the proposal and instead maintain the 8-hour ozone NAAQS at 75 ppb; in addition, it was noted that the next review of the standard to determine if it is health protective had already begun. After an April 2014 court ruling decreeing that U.S. EPA propose a rule based on the latest ozone review, U.S. EPA complied by proposing in November 2014 to lower the ozone NAAQS in the range of 65-70 ppb.

Dr. Fine reminded the Committee that ozone non-attainment areas are classified (i.e., extreme, severe, serious, moderate, marginal) based how much the area exceeds the standard, thus affecting the required attainment date. Final designations for the proposed ozone NAAQS are anticipated by October 2017, thus a State Implementation Plan (SIP) would be due October 2020. If the South Coast Air Basin (SCAB) is classified as “extreme” nonattainment, the area would be given 20 years from the effective date to attain the standard, thus 2037.

A chart of NO<sub>x</sub> emissions from all sources (e.g., heavy-duty diesel trucks, off-road equipment, ships, locomotives, etc.) in our region was displayed along with the levels of emissions the SCAB needs to reduce to meet the existing and new ozone standards. Preliminary data estimates the need for 80-85 percent NO<sub>x</sub> reductions from the 2023 baseline to meet the proposed range of 65-70 ppb.

Dr. Fine highlighted the original Board-approved comments the SCAQMD staff submitted during the 2010 proposed revisions to the ozone NAAQS that are proposed to be re-submitted to U.S. EPA. Those comments included the support of standards based on the health effects science and that the implementation rules should be designed to ensure workable attainment dates and address fair-share reductions from federal sources, deployment of zero-emitting technologies, and an integrated SIP for all pollutants.

SCAQMD staff is currently proposing to submit additional comments (to simplify and streamline submittals for exceptional events, provide clear guidance on international transport, and support flexible monitoring requirements) that have been included in a comment letter to U.S. EPA, for which staff is seeking the Board’s approval.

Dr. Clark E. Parker, Sr. asked why the U.S. EPA believes the science will provide the ability to meet these new ozone standards when the current ozone standards are already a challenge to attain. Dr. Barry Wallerstein, Executive Officer, responded that, as noted in the presentation, U.S. EPA reviews scores of health studies and sets

standards based solely on public health and not on the ability to meet the standards. However, the U.S. EPA also issues an implementation rule that does provide guidance to air agencies as to methods to assist in demonstrating attainment, such as the consideration of emissions entering the Basin from outside the U.S. known as international transport. Dr. Wallerstein expressed concern that the CAA is long overdue for updates but political gridlock has hampered the ability to “open” the CAA and revise, although it may happen in the near future if regions are unable to achieve the standards. Dr. Wallerstein highlighted his own personal experience during decades working in air pollution control and the seeing evolution of technology, such as particulate matter filters on diesel trucks and engines, concluding that dramatic change can happen but it takes time. He advised the Committee to allow staff to conduct the necessary analysis of the technology advancements and forecast the needs to meet the new ozone standard. The analysis will take place during the development of the 2016 Air Quality Management Plan (AQMP) to determine our ability to meet the 2008 8-hour ozone NAAQS.

Dr. Parker asked if the proposed new ozone standard is not unrealistic. Dr. Wallerstein noted that this particular ozone standard faced litigation in the courts forcing U.S. EPA to revisit the health studies multiple times to confirm the conclusions. Ultimately, the conclusion was the 2008 ozone standard is not health protective with an adequate margin of safety. The next step is to determine what U.S. EPA will allow in their implementation rule for the proposed ozone standard to assist areas in meeting the standard. However, he felt confident that with Southern California, including five percent of the national population, and having significant economic influence, there is optimism that the attainment issues in the Basin will be considered at the federal level.

Dr. Joseph Lyou suggested the comment letter be strengthened to further emphasize the importance of the health studies that reflect and support the need to change the current ozone standard. He believed some words in the comment letter such as “flexibility” and “workable” should be more clearly defined. Dr. Wallerstein responded that such terms were intentionally broad at this point, and that more clearly defining such words requires extensive conversations between Board members and stakeholders to determine how much flexibility would be necessary to meet the standards or what would be considered workable attainment dates. In order to make such determinations, the technical work and analysis should take place first. If at that time consensus finds that the standard cannot be reached in a timely manner, then what needs to be done can be discussed.

Dr. Lyou expressed his concern that the new technologies to assist in meeting the standards already exists so the question is a matter of commitment. He recognized that there are “artificial barriers” such as who is responsible for reductions and who pays for such reductions. But he also reminded the Committee that the cost is not just

money for reductions but those who pay with their health if standard is not met. Dr. Parker agreed with Dr. Lyou that there are barriers as reflected in the chart showing the NO<sub>x</sub> sources that need to reduce emissions. Most of the sources are not regulated by the SCAQMD but rather are under federal or CARB authority. He noted that this will be a challenge nationwide and not just in Southern California.

Councilmember Judith Mitchell suggested that the comment letter provide additional emphasis on the federal government providing a fair share of emission reductions in the region and to assist in funding support of the deployment of zero emission technologies.

Mayor Ben Benoit agreed with his fellow Committee members that it is challenging for the SCAQMD to achieve the ozone standards when a majority of the emission sources are under state and federal authority, and he also stated that this message needs to be carried to Congressional representatives.

The Committee approved the comment letter with the suggested modifications to be sent to the full Board for their approval at the next meeting. No comments were made by the public.

Moved by Mitchell; seconded by Lyou; unanimously approved with suggested changes.

## **INFORMATIONAL ITEMS:**

### **2) Report on U.S. EPA's 2008 Ozone Implementation Rule**

Dr. Elaine Chang, Deputy Executive Officer in Planning and Rules, provided a detailed update of U.S. EPA's final Implementation Rule for the 2008 8-hour Ozone NAAQS. She reminded the Committee that a draft rule was proposed in June 2013 and a pre-Federal Register publication of the final rule was released on February 13, 2015. The purpose of the rule is to provide guidance to air agencies on SIP planning requirements. Such guidance will affect the development of the 2016 AQMP, specifically the 2008 8-hour ozone standard (75 ppb), the 1979 1-hour ozone standard (120 ppb) and the 1997 8-hour ozone standard (80 ppb). As a reminder, the SIP to demonstrate attainment of the 2008 8-hour ozone standard is due July 20, 2016. In the implementation rule, U.S. EPA is revoking the 1997 ozone NAAQS (80 ppb) but is retaining 17 requirements to ensure the region does not backslide from the progress already achieved and previous SIP commitments. Such requirements included continued implementation of Reasonably Available Control Technology (RACT)/ Reasonably Available Control Measures (RACTM), Reasonable Further Progress (RFP), transportation control measures, vehicle miles traveled (VMT) offset demonstration, attainment demonstration, contingency measures and CAA Section

185 emission fees. Sanctions could still be imposed if there is a failure to implement or submit a SIP. Dr. Chang noted that while there is a revocation of the 1997 ozone NAAQS, the backsliding requirements maintain compliance with the standard so that there is no change in our SIP commitment or implementation schedule.

Dr. Chang highlighted important elements in the final implementation rule. The base year for the 2016 AQMP should be 2011 as default with an option to use 2012. The emission inventory was submitted to U.S. EPA in July 2014. The emission inventories are updated every three years, examining all emission sources for a typical ozone season day and disclosing the inventory in a public process. If the emission inventory is changed after the SIP submittal, then there is a need to re-evaluate to ensure that there was no impact on the attainment demonstration or control strategy.

The RACT/RACM analysis will be based on technological and economic feasibility and should consider information submitted as part of the public comment period. The RFP analysis will ensure reasonable progress prior to the attainment deadline, specifically 15 percent reduction in volatile organic compounds (VOCs) for the first six years and three percent per year VOC reductions with an option for substituting NOx reductions. Reductions from sources outside the non-attainment areas are not allowed in the RFP analysis. This particular requirement poses a potential problem for the 2016 AQMP in the Coachella Valley since there are limited local sources and in the past, RFP in the Coachella region has been combined with that in the SCAB region to demonstrate compliance.

Emission reductions to demonstrate attainment are required to be implemented in the calendar year prior to the attainment date. Since the attainment date is July 20, 2032, the control strategies would need to be in place by the beginning of 2031. Attainment is demonstrated by photochemical grid modeling and an attainment finding is based on the most recent three complete years of ambient data prior to the attainment date; thus, for the 2008 8-hour ozone standard, the years would be 2021, 2022 and 2023.

Contingency measures require one year's worth of emission reductions for each RFP milestone year and attainment year. Contingency measures are not needed for extreme non-attainment areas with enforceable commitments to develop and adopt contingency measures that meet the CAA Section 182(e)(5) ("black box") requirements. Those requirements include submitting measures three years prior to the attainment date in regulatory form. As discussed in the last agenda item, U.S. EPA is considering the effect from emissions contributed from outside the U.S. known as international transport. The determination will be on a case-by-case basis, but the attainment demonstrations would still need to meet all other CAA requirements.

Finally, Dr. Chang noted that U.S. EPA is encouraging states to adopt policies and programs such as energy efficiency, renewable energy, land use planning and travel efficiency that provide co-benefits to assist in meeting the standards.

Dr. Wallerstein was supportive of the U.S. EPA in considering influential factors such as international transport but noted that attainment cannot be achieved without further reductions from federal sources. Councilmember Judith Mitchell asked whether international emissions could be quantified. Dr. Philip Fine stated that he believes the quantification of the international emissions might require the use of global models, but U.S. EPA should provide guidance on how to treat natural vs. anthropogenic emissions.

Dr. Parker inquired as to why the region would still be subject to sanctions if the U.S. EPA is revoking the 1997 ozone standard of 80 ppb. Dr. Chang reminded those present that the final implementation rule includes 17 anti-backsliding requirements that still need to be implemented and non-implementation would trigger the sanctions. Dr. Wallerstein acknowledged that there are multiple standards and various deadlines to attain healthy ozone levels, and the aim is to not undermine previous commitments while sharing U.S. EPA's goal of progressing to cleaner air.

Dr. Lyou questioned the concern for Coachella Valley not being able to demonstrate RFP and Dr. Chang explained that the Coachella Valley is not expected to attain the ozone standard by 2018 so RFP would still be required and necessary related emission reductions in the SCAB would not be occurring fast enough.

[Supervisor Shawn Nelson arrived at the Hall of Administration videoconference location at 9:35 a.m.]

### **3) Report on 2016 AQMP Passenger Transportation and Goods Movement White Paper Development**

Mr. Henry Hogo, Assistant Deputy Executive Officer/Science & Technology Advancement, provided an update on the development of two of the ten white papers for the 2016 AQMP. Staff provided background information on the development of the 2016 AQMP and preparation of "white papers" to facilitate input regarding the plan's development. In addition, the white papers will provide factual background information and discuss major policy issues. There are a total of ten white papers; of which, three are directly related to mobile sources: passenger transportation, goods movement, and off-road equipment sectors. Another two white papers (energy and business case) are indirectly related. The Energy and Business Case White Papers will use some of the information provided in the Passenger Transportation and Goods Movement White Papers to look at various energy needs associated with the different mobile source technologies analyzed (e.g., electricity demand, hydrogen fueling infrastructure) and "business cases" for deployment of cleaner technologies.

In developing the white papers, working groups comprising members from the 2016 AQMP Advisory Group and other interested parties were formed to provide input and comments on the papers' development. To date, there have been four meetings of the two working groups. As part of the development of the white papers, staff will be coordinating with CARB and CEC on the state level and SCAG, local county transportation commissions, and subregional councils of governments on transportation and land use issues.

Relative to the Passenger Transportation White Paper, the white paper will build upon SCAG's Regional Transportation Plan/Sustainable Community Strategies (RTP/SCS) development. At this time, staff is building on SCAG's 2012 RTP/SCS. In addition, CARB has conducted several technology assessments of light-duty and medium-duty vehicles as part of the adoption of the Low-Emission Vehicle (LEV) III regulation known as the "Advanced Clean Cars" Program, and the white paper will identify successes and challenges in reducing emissions from the passenger transportation sector. The white paper will also examine various emissions reduction scenarios to illuminate areas where further emission reductions may be realized and those areas where further emission reductions may be potentially more challenging.

The passenger transportation sector comprises seven categories: light-duty vehicles (passenger cars, light-duty trucks, sports utility vehicles, and minivans); medium-duty trucks and vans (heavier pick-up trucks, passenger and cargo vans); transit buses and shuttle buses; school buses; commuter rail; air transportation; and passenger ferries. Relative to emissions, the passenger transportation sector contributes around 27 percent of the total NOx emissions between 2014 and 2032, and 23 percent of the total VOC emissions in 2014, with a decrease to 15 percent in 2032.

Relative to the Goods Movement White Paper, the white paper will build upon information from the technology assessments currently in development by CARB (SCAQMD staff has been involved in the assessments and is the lead on the development of the harbor craft technology assessment). In addition, the white paper will build upon CARB's Sustainable Freight Strategy development and the Caltrans Freight Mobility Plan. Similar to the Passenger Transportation White Paper, the Goods Movement White Paper will discuss successes and challenges in reducing emissions from the goods movement sector. The white paper will also examine various emissions reduction scenarios to illuminate areas where further emission reductions may be realized and those areas where further emission reductions may be potentially more challenging.

The goods movement sector comprises six emissions source categories: heavy-duty trucks; locomotives; marine vessels; harbor craft; cargo handling equipment, and air



cargo. The goods movement sector's emissions contribution to total NOx emissions is around 46 percent in 2014 and decreases to 38 percent in 2032.

A proposed outline for both white papers has been presented to the working groups for input and comments. The outline includes: purpose and background (including emissions from the various sources in each sector), overview of potential technologies that can be commercialized and deployed and potential operational efficiencies; overview of policy considerations in developing the 2016 AQMP; examples of potential emission reduction scenarios and discussion of the scenarios; and recommendations and proposed actions.

Staff provided an overview of the historic regulatory programs and strategies that have led to emission reductions in the passenger transportation and goods movement sectors. Relative to the passenger transportation sector, funding incentives programs such as the current Clean Vehicle Rebate Project (CVRP) for zero-emission and plug-in hybrid electric vehicles and the CEC AB 118 projects for electric vehicle charging and alternative fuel infrastructure have helped to accelerate deployment of zero-emission and alternative fuel vehicles. CARB's LEV-III Program calls for tighter tailpipe emissions standards beginning with model years 2015 through 2025; and the recent U.S. EPA greenhouse gas standards for light- and medium-duty vehicles will have co-benefits in reducing criteria pollutant emissions. In addition, there are federal emissions standards for locomotives, marine vessels, and aircraft that will result in cleaner engines. Relative to strategies for reducing vehicle miles travelled and congestion, the implementation of SB 375, promotion of active transportation programs, and choosing mobility alternatives such as transit and car-sharing, will provide co-benefits in reducing criteria pollutant emissions.

Relative to the goods movement sector, existing regulations such as the State Truck and Bus Regulation and U.S. EPA greenhouse gas standards for heavy-duty vehicles will further reduce emissions from heavy-duty trucks. CARB has adopted several regulations reducing emissions from ocean-going vessels while at berth, cargo handling equipment, harbor craft, transportation refrigeration units, and ground support equipment at airports. Funding incentives programs such as the Carl Moyer Program and Proposition 1B have been successful in accelerating emission reductions in the goods movement sector.

Operational efficiencies identified in the goods movement sector that result in fuel cost savings have potential co-benefits in reducing criteria pollutant emissions. Some examples include "smart" delivery routing through greater use of "connected vehicle" concepts and intelligent transportation systems; larger ocean-going container vessels resulting in fewer vessels calling at the marine ports; larger trains resulting in fewer train trips; and vessel sharing and locomotive sharing may have additional co-benefits.

Staff discussed some of the initial emission reduction scenarios analyzed to-date. The initial set of emissions scenarios was developed to initiate discussions with the working group participants. The scenarios are for illustrative and discussion purposes only and do not represent control strategies to achieve the emission levels in each of the scenarios. The scenarios provide information on areas to focus future technology development and commercialization and the timing for deployment of advanced control technologies. Additional scenarios may be developed based on discussions with the working groups.

To date, staff has developed six scenarios based on the 2023 and 2032 baseline emissions inventories for NO<sub>x</sub>. The six scenarios include: “equal share” or “across-the-board” emission reductions (for 2023, a 65 percent reduction in NO<sub>x</sub> is needed from all sectors to achieve the 8-hour ozone air quality standard and 75 percent reduction in NO<sub>x</sub> from the 2023 baseline is needed by 2032); all sources within each sector are at the greatest level of control based on existing emission standards; assumption that certain emission source categories can achieve an additional 90 percent NO<sub>x</sub> emissions reduction; and varying penetration of zero-emission technologies (25, 50, and 75 percent).

The first three of the six scenarios were discussed. To illustrate, the emission levels from the various sources, staff presented the emission reductions from the major source categories in the passenger transportation and goods movement source categories in graphical form. Bar charts were presented showing the “equal share” level of NO<sub>x</sub> emissions for 2023. The horizontal line on the bar chart represents the overall 65 percent NO<sub>x</sub> emissions reduction. Assuming that all sources are at the most controlled emissions levels based on existing standards, the overall 65 percent reduction level cannot be achieved among the various emissions sources. However, the analysis indicates that there are several emissions source categories (heavy-duty trucks and ocean-going vessels) which have higher remaining emissions compared to the other source categories. Assuming that some of these source categories can realize additional emission reductions through advanced control technologies or greater penetration of zero-emission technologies (in addition to the remaining source emissions being at the most controlled level), the 65 percent overall reduction can be achieved. Similar bar charts were presented for the 2032 scenarios.

Staff provided a summary of its initial assessment based on the emission reduction scenarios. The scenarios indicate that the “equal share” target of either 65 percent for 2023 or 75 percent for 2032 can be achieved assuming every source meets the most stringent levels of emissions based on existing standards. Some emission sources may not be able to reach the “equal share” level; as such, there is a need for other sources to further reduce their emissions. However, there is a potential for other sources to reach “equal share” levels or beyond with greater penetration of zero- and

near-zero emission technologies. Therefore, there is a need to accelerate commercialization and deployment of zero- and near-zero emission technologies. In addition to greater advanced-technology deployment, operational strategies that are being implemented (for fuel savings and moving goods more effectively) have the potential to provide additional emission reductions.

Staff indicated that based on the scenarios analyzed, there are several large emission sources where significant emission reductions can potentially be achieved. One policy question is the need to place higher priority on these sources to reduce emissions beyond the “equal share” targets and less emphasis on smaller sources that have a greater number of vehicles or equipment. Regardless, all sources will need to reduce emissions to the greatest extent possible to attain air quality standards.

Staff concluded with next steps in the white paper development process. Staff indicated there may be additional scenarios suggestions from the working group participants that staff will analyze. Staff will discuss with the working group its initial assessment of the scenarios and solicit additional input and comments. Staff is drafting the early chapters of the documents and will release to the working group for their comments. The next meeting is tentatively scheduled for March 4, 2015. However, the meeting may be postponed to a slightly later date depending when draft chapters will be ready for the working group’s review. (This request came from the working group participants.)

Dr. Joe Lyou asked as to what the respective bases is for the development of the emissions reduction scenarios. Staff indicated that the baseline emissions for 2023 and 2032 were developed based on the reported emissions from the 2012 AQMP with existing regulations.

Dr. Parker asked a general question regarding the stalled labor negotiations at the ports and whether emissions from ships that are waiting outside of the ports have an effect on the 8-hour ozone readings. Staff indicated that additional air monitoring equipment has recently been deployed in the port area to see what the air quality levels are during this period of time. It is not clear if the situation will have an impact since the ships are further offshore. Staff indicated that there is a possibility that fewer trucks may be entering the ports during this time; however, Dr. Lyou indicated that trucks have been arriving at the ports, but leave empty since the containers either cannot be accessed due to the backlog or have not arrived, and this may increase emissions on the landside. Staff will be evaluating the measurements to see if there are any air quality impacts.

Dr. Lyou made a general statement that the process of developing the white papers will be helpful in many ways; however, he was not sure as to how informative the white papers will be to inform the Board on next steps. The white papers will lay out

the issues; however the papers will not provide to the Board as decision makers, “here are the alternatives, here are your authorities; and possible control measures”. The Board will need to think about the next steps as the white papers go to the Board. There are pluses and minuses. Overall, it is a novel approach and will be helpful. However, the Board will need to think about how to take this information to make decisions about what was learned and decide on the regulatory process.

On the transportation side and perhaps both transportation and goods movement, Dr. Lyou commented on how much creative thought and different thinking may help. Dr. Lyou mentioned car-sharing programs such Uber-pool and what difference will these innovative programs have on air quality. Are we thinking about transportation control measures that go beyond what SCAG is discussing as part of its development of the RTP. Is it time for the SCAQMD to go to SCAG to say that the region’s air quality needs go beyond what the RTP has provided? The SCAQMD may have to develop transportation control measures that go beyond the RTP.

On the goods movement side, when Dr. Lyou discussed with goods movement representatives, they talked about a need to reduce imports and movement of goods and have more local manufacturing. There may be ways to incentivize bringing back local manufacturing. There may be other more creative approaches. When it comes to regulatory authority, Dr. Lyou indicated that we need to be aggressive and use all authority available to the SCAQMD. Dr. Lyou’s preference is to have the white papers take a look at the SCAQMD authority.

Supervisor Nelson commented that after spending time at SCAG, he has pushed SCAG to take another look at public transportation to not only lower emissions, but also reduce congestion. However, he believes SCAG’s model misses “important academic issues.” Supervisor Nelson indicated that models such as those back east where commuters living in the suburbs can take transit into a central city core and upon arriving, are able to walk to their office, are examples that could be encouraged in the SCAQMD region. If there are ways to incentivize businesses to locate near train stations to provide convenience to the commuter, there will be a significant increase in ridership. Supervisor Nelson indicated that SCAG is not working with the Riverside transportation agency to develop rail transportation from Riverside County to San Bernardino County that can connect with the east-west rail lines and the Ontario Airport. There are no real options as a resident in those areas except the freeways and the freeways are generally congested. Transit is no better given the congestion. We can get involved in bigger discussions that make sense and little things can make a difference.

Supervisor Nelson indicated that on the goods movement side, the SCAQMD should not be regulating how manufacturers operate and produce their goods. Dr. Lyou clarified that we should consider actions within our authority and “not take over

things”. Dr. Lyou indicated that Supervisor Nelson’s comments on the approaches to transit are common sense and should be supported.

Mayor Benoit indicated that he will bring the message to SCAG regarding a north-south corridor in the Inland Empire. Supervisor Nelson indicated that Metrolink has an opportunity with the SCAQMD to think a little bigger and make an effort to initiate discussion on things that can make a difference.

Dr. Parker indicated that these are types of conversations in which the Board will be involved in the upcoming AQMP. At the end of the day, the Board has to concentrate on things the SCAQMD can do and what authority we have and make sure that we do not spend too much energy in other areas and “drop the ball” on those areas where we need to focus. At the same time, we need to make sure that we do not let businesses leave our region. Otherwise, we will not have meaningful jobs to support the infrastructure needed to achieve air quality goals. Dr. Parker indicated that he is looking forward to the next two years of AQMP development and the discussions afterwards on how the plan will be implemented.

#### **WRITTEN REPORTS:**

##### **4) Rule 2202 Activity Report**

The report was received as submitted.

##### **5) Monthly Report on Environmental Justice Initiatives – CEQA Document Commenting Update**

The report was received as submitted.

#### **OTHER BUSINESS:**

None

#### **PUBLIC COMMENT:**

None

The meeting was adjourned at 10:46 a.m.

#### **Attachment**

Attendance Roster

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
MOBILE SOURCE COMMITTEE MEETING  
Attendance Roster- February 20, 2015**

NAME	AFFILIATION
Dr. Clark E. Parker, Sr.	SCAQMD Governing Board ( <i>via videoconference</i> )
Dr. Joseph Lyou	SCAQMD Governing Board
Mayor Ben Benoit	SCAQMD Governing Board ( <i>via videoconference</i> )
Councilmember Judith Mitchell	SCAQMD Governing Board
Supervisor Shawn Nelson	SCAQMD Governing Board ( <i>via videoconference</i> )
Board Asst/Consultant Mark Abramowitz/	SCAQMD Governing Board (Lyou)
Board Asst/Consultant Chung Liu	SCAQMD Governing Board (Mitchell)
Tara Tisopulos	Orange County Transportation Authority
Erin Sheehy	Environmental Compliance Solutions
Curtis Coleman	Southern California Air Quality Alliance
David Rothbart	Los Angeles County Sanitation Districts
Noel Muyco	Southern California Gas/San Diego Gas & Electric
Susan Stark	Tesoro
Adam Wood	Curt Pringle & Associates
Elaine Chang	SCAQMD Staff
Philip Fine	SCAQMD Staff
Barbara Baird	SCAQMD Staff
Kurt Wiese	SCAQMD Staff
Matt Miyasato	SCAQMD Staff
Henry Hogo	SCAQMD Staff
Dean Saito	SCAQMD Staff
Randall Pasek	SCAQMD Staff
Peter Greenwald	SCAQMD Staff
Joe Cassmassi	SCAQMD Staff
Jean Ospital	SCAQMD Staff
Chris Marlia	SCAQMD Staff
Carol Gomez	SCAQMD Staff
Sam Atwood	SCAQMD Staff
Michael Krause	SCAQMD Staff

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
MOBILE SOURCE COMMITTEE MEETING  
Attendance Roster- February 20, 2015**

Patti Whiting	SCAQMD Staff
Kevin Durkee	SCAQMD Staff
Kim White	SCAQMD Staff

[↑ Back to Agenda](#)

BOARD MEETING DATE: March 6, 2015

AGENDA NO. 23

REPORT: Stationary Source Committee

SYNOPSIS: The Stationary Source Committee met Friday, February 20, 2015. Following is a summary of that meeting.

RECOMMENDED ACTION:  
Receive and file.

Dr. Joseph Lyou, Vice Chair  
Stationary Source Committee

MN:am

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### **Attendance**

The meeting began at 10:50 a.m. In attendance at SCAQMD Headquarters were Committee Members Dr. Joseph Lyou and Judith Mitchell. Shawn Nelson (arrived 11:05 a.m., left 12:00 p.m.) and Ben Benoit attended via videoconference. Absent was Dennis Yates. Dr. Joseph Lyou chaired the meeting and suggested taking the agenda items out of order.

### **INFORMATIONAL ITEMS**

#### **4. Rule 1148.1 – Oil and Gas Production Wells**

Naveen Berry, Planning and Rules Manager, provided a status report on staff's progress to date on Proposed Amended Rule (PAR) 1148.1 – Oil and Gas Production Wells. Susan Nakamura, Director of Strategic Initiatives, presented a status of Rule 1148.2 - Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers as it relates to Rule 1148.1. Dr. Tom Williams, representing Sierra Club and others, commented that Rule 1148.2 has gone very well, but he was still concerned about the PAR1148.1 and suggested that staff further evaluate: City of Carson's recently revised Odor Ordinance, considered



lower VOC thresholds for all applicable rules, also explicitly regulate hydrogen sulfide. Blair Knox, Director of Regional Affairs, California Independent Petroleum Association, commented several existing rules (e.g., 402, 1173, and 1176) are already implemented to regulate oil and gas facilities' emissions, indicated that electric drilling rigs are infeasible unless sufficient electrical infrastructure is readily available, and that additional proposed requirements are not necessary.

In response to Councilmember Mitchell's query pertaining to the impact of the 1,500 foot distance requirement, Mr. Berry indicated that sources within 1,500 feet of sensitive receptors would be subject to the proposed, more stringent requirements, only through triggers based on the frequency of confirmed odors events. Councilmember Mitchell also suggested expanding the scope of the notifications to the public beyond our web-site through meetings in the community. Dr. Barry Wallerstein committed to this approach through a Board Resolution. Dr. Lyou suggested that data collected under Rule 1148.2 may be helpful to inform voters before they vote on proposed drilling ordinance in the City of Hermosa Beach, and others making decisions about drilling proposals.

### **3. Rule 415 – Odors from Rendering Facilities**

#### **Rule 416 – Odors from Kitchen Grease Processing**

Dr. Philip Fine, Assistant Deputy Executive Officer of Planning and Rules, gave the staff presentation. The development of PRs 415 and 416 is an outgrowth of the Clean Communities Plan (CCP) for Boyle Heights, which identified odors as one of the top community concerns. There have been more than 350 complaints over the ten years or more, but they have trailed off in recent years, perhaps due to lack of awareness of or satisfaction with the complaint response process. Animal rendering and kitchen grease processing, under PR 415, is an important and unique industry that avoids landfilling and other disposal of millions of tons of material for beneficial reuse. The local industry consists of four facilities all located in the Vernon area. PR 416 covers those facilities that process kitchen grease but do not render animal material. PR 416 consists of approximately 10 facilities and is on a different rule development schedule, and as such will come before the Committee in the near future. Odors from processing these materials are difficult to measure and quantify, and some can be fleeting. However, strong odors can travel great distances and can cause health effects, such as nausea, coughing, headache, and respiratory irritation. Often, tracking odors back to a particular source is difficult given the close proximity of the facilities to one other.

The PR 415 concepts include: implementation of odor best management practices (BMPs) in the short term; enclosures vented to odor control equipment or closed systems in the longer term; odor complaint signage; and the use of odor mitigation plans (OMPs) for ongoing odor issues. Key issues include: response and transparency of how odor complaints are handled; effectiveness of Rule 402

provisions for nuisances; a concern that a “one-size-fits-all” approach may not produce the desired results; feasibility of enclosures/odor control equipment; OMP triggers vs. Rule 402 violations; mandatory BMPs vs. a site-specific OMP with facility-specific BMPs; financial impacts of rule compliance; and data on the origin and extent of odors in the Vernon area. For PR 415, two Working Group meetings have been held and a third meeting is scheduled for February 24<sup>th</sup>. A Public Workshop is scheduled for March 5<sup>th</sup> in the community with a close of comments of March 18<sup>th</sup>. A Public Hearing on PR 415 is scheduled for May 1<sup>st</sup>.

Public comments came from two individuals. Jimmy Andreoli II presented comments on behalf of Baker Commodities. Baker is a family-run business, now in its 3rd generation, and began operating in 1937. They are committed to environmental stewardship. Rendering is repurposing of animal waste into useful products and the industry processes billions of material each year and diverts such material from landfills, with the State of California prohibiting disposal of carcasses into landfills. Due to the prevention of greenhouse gas emission resulting from business operations, Baker has negative carbon footprint. Baker wishes to work with staff to address migrating odors and requests additional time to work with staff. Mr. Andreoli stated that the rule as written today would cause Baker to cease operations due to costs and would like additional time to review staff information and receive information from a request of data and information. Lyndy Lewis (Regulatory Compliance Manager) commented for Irvine Ranch Water District regarding PR 416. They agree with the staff presentation that POTWs don't want trap grease in sewer system. Brown grease is desirable to inject directly into digesters and they are expanding operations to receive such material. They want to understand the scope of the rule relative to such facilities that collect fat, oil and grease (FOG). The POTWs would like to be a participant in PR 416 rule development. Irvine Ranch Water District continues working with California Association of Sanitary Agencies (CASA) and Cal Recycle on FOG issues and would like to participate in the rule development process in light of those efforts.

Supervisor Nelson expressed concerns regarding rendering odors and SCAQMD's role in regulating these odors. The odor issue, he said, is a parallel situation to dairy farms in Chino. Odors from rendering existed 80 years before community residents moved in. Residents in the community knew about rendering odors when they bought homes or rented apartments. Very few are still alive in the community that didn't know what they were getting into. Supervisor Nelson said he does not accept the idea that SCAQMD needs to regulate rendering odors if there are no toxics, few health issues from odors and gave a real-life example of when Hunt-Wesson boiled tomatoes in Fullerton, which was a part of landscape in the community. Phone calls regarding odors, he said, does not equal health effects. Community organizers can drive the issue and build momentum. The Board should base decisions on health issues, not complaints, and be objective regarding what needs to be done regarding

odors, if any. Dr. Barry Wallerstein responded that staff is in the midst of rule development and conducting an ongoing dialogue with facility operators. There has been a disagreement with operators over the appropriate level of controls. It should be noted that odors are detectable at Resurrection Church. Dr. Wallerstein has met with one of the facilities of greater concern and they have indicated in writing they can do more to address odors. Trying to address community concerns while balancing responsible facility operations is needed as odors are major concern of the Boyle Heights community, as expressed during CCP meetings. SCAQMD has been involved with similar odor issues for transfer stations. Dr. Wallerstein concluded with an offer to discuss Supervisor Nelson's concerns further with him. He also mentioned, in response to the Supervisor's concern that the comments of Baker Commodities would not go unheeded, that staff was meeting with facility personnel after the Committee meeting.

Councilmember Mitchell asked about the precedent for enclosure and would there be different control measures proposed for the four rendering facilities. Dr. Fine responded that one facility already enclosed part of the operation in response to a prior Notice of Violation. The BMPs are in addition to the enclosure requirement in order to level the playing field. He also stated that control efficiency of odor control equipment is difficult to quantify, but that the rule proposal addresses areas common to all rendering facilities. Dr. Lyou commented in closing that the Executive Officer would be meeting with Supervisor Nelson and the staff will be meeting with the facility, and that he believes the staff will expand their explanation of the health effects associated with odors in the staff report.

### **ACTION ITEM**

#### **1. Annual RECLAIM Audit Report for Compliance Year 2013**

Mohsen Nazemi, Deputy Executive Officer for Engineering and Compliance, gave a brief description of the RECLAIM Audit Report for Compliance Year 2013, which is currently on the agenda for the Governing Board's March 6, 2015 meeting. He pointed out that the results he was discussing were preliminary in that the audit of one RECLAIM facility remained incomplete and that the report presented to the Governing Board would include final data for all RECLAIM facilities.

The 2013 Compliance Year covers January 1, 2013 through June 30, 2014—the twentieth year of the RECLAIM program. The findings in the annual report are consistent with those for prior years. The RECLAIM universe had a net increase of two active facilities, bringing the total number of facilities in the program to 275 as of June 30, 2014. RECLAIM met its aggregate emission goals and the individual facility allocation compliance rates were very high. Compliance Year 2013 NO<sub>x</sub> emissions were 24% below aggregate Allocations. Compliance Year 2013 SO<sub>x</sub> emissions were 35% below aggregate Allocations.

RECLAIM also met all other performance criteria. Federal New Source Review offset ratios were met. There was no significant shift in emissions from winter to summer, and no evidence of increased health risk due to RECLAIM. Although RTC prices were significantly higher than in recent years, the average prices for discrete year and infinite year NOx and SOx RTCs were all well below program review thresholds. One low-priced NOx transaction caused an anomalous average: RTC prices typically decline as expiration approaches but the average price of Compliance Year 2015 RTCs traded in calendar year 2013 was similar to that of Compliance Year 2013 RTCs and significantly lower than that of Compliance Year 2014 RTCs. Average RTC prices in calendar year 2014 followed the typical trend.

Mr. Nazemi concluded by mentioning that investors remained active participants in the RECLAIM market during calendar year 2014; at the end of the year investors held 4.6% of IYB NOx and 0.9% of IYB SOx. He asked that the Stationary Source Committee recommend that the Annual RECLAIM Audit Report for 2013 Compliance Year be presented to the Board for approval.

There were no questions or comments regarding this item from the public and no questions, comments, or discussion on the part of Committee members.

*Moved (Mitchell), seconded (Lyou) and unanimously recommended for approval.*

## **INFORMATIONAL ITEM**

### **2. Reg. IX – Standards of Performance for New Stationary Sources Reg. X – National Emission Standards for Hazardous Air Pollutants**

Philip Fine The staff presentation was waived. Dr. Philip Fine stated that the proposed amendments were to adopt by reference existing federal standards. As the requirements currently exist, they do not represent any new requirements. There were no committee or public comments.

## **WRITTEN REPORTS**

All written reports were acknowledged by the Committee.

## **OTHER BUSINESS**

Mohsen Nazemi provided a brief summary of the incident at ExxonMobil Torrance Refinery. He indicated that on Wednesday morning, February 18, 2015, around 9:00 a.m. the Electrostatic Precipitator (ESP) venting the Fluidized Catalytic Cracking Unit (FCCU) had an explosion which released spent catalyst dust into the air and deposited

around the refinery on neighboring community's cars, homes, and other areas. SCAQMD responded to the incident and deployed both compliance staff and an emergency response team and took air and fallout samples. The results of our sampling and report of the incident will be posted on our web-site. This was in informational item only.

### **PUBLIC COMMENTS**

There were no public comments. Dr. Lyou announced that the next Stationary Source Committee meeting is scheduled for March 20, 2015 and adjourned the meeting at 12:10 p.m.

### **Attachments**

Attendance Roster

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
STATIONARY SOURCE COMMITTEE  
February 20, 2015  
ATTENDANCE ROSTER (Voluntary)**

NAME	AFFILIATION
Dr. Joseph Lyou	SCAQMD Governing Board
Mayor Ben Benoit (VT)	SCAQMD Governing Board
Supervisor Shawn Nelson (VT)	SCAQMD Governing Board
Councilmember Judith Mitchell	SCAQMD Governing Board
Mohsen Nazemi	SCAQMD staff
Jill Whynot	SCAQMD staff
Elaine Chang	SCAQMD staff
Barbara Baird	SCAQMD staff
Danny Luong	SCAQMD staff
Jean Ospital	SCAQMD staff
Susan Nakamura	SCAQMD staff
Joe Cassmassi	SCAQMD staff
Bill Wong	SCAQMD staff
Naveen Berry	SCAQMD staff
Bay Gilchrist	SCAQMD staff
Doug Smith	Baker Commodities, Inc.
Dr. Tom Williams	Sierra Club/CCSC
Noel Muyco	So Cal Gas
Rita Loof	RadTech
Bill LaMarr	California Small Business Alliance
David Rothbart	LA County Sanitation District
Adam Wood	Curt, Pringle & Associates

BOARD MEETING DATE: March 6, 2015

AGENDA NO. 24

REPORT: Technology Committee

SYNOPSIS: The Technology Committee met on February 20, 2015. Major topics included Technology Advancement items reflected in the regular Board Agenda for the March Board meeting. A summary of these topics with the Committee's comments is provided. The next Technology Committee meeting will be on March 20, 2015.

RECOMMENDED ACTION:

Receive and file.

John J. Benoit  
Technology Committee Chair

MMM:pmk

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**Attendance:** Supervisor John J. Benoit and Mayor Miguel Pulido participated by videoconference. Councilmember Judith Mitchell was in attendance at SCAQMD headquarters. Councilmember Joe Buscaino, Supervisor Janice Rutherford and Mayor Dennis Yates were absent due to a conflict with their schedule.

## MARCH BOARD AGENDA ITEMS

### 1. **Execute and Modify Contracts for Hydrogen Station Upgrades and Related Work**

Last year, the Board approved contracts for hydrogen station upgrades in the South Coast Air Basin. While these stations are being upgraded, equipment must be taken out of service. To continue to provide hydrogen fuel to customers at stations being upgraded, CEC through PON 13-607 provided \$999,677 to develop and deploy a commercial mobile hydrogen fueler at stations going offline for the equipment upgrade transition. This action is to cofund development and demonstration of the commercial mobile hydrogen fueler up to \$200,000 from the Clean Fuels Fund (31). These actions are to also modify a previous award for Mebtahi's hydrogen station upgrade adding \$400,000 and to amend a technical assistance contract adding \$50,000 to evaluate upgraded hydrogen equipment from the Hydrogen Fueling Infrastructure Network Fund (63). Finally, temporary loans of \$201,461 and \$297,460 from the Clean Fuels Fund (31) to the Hydrogen Fueling Infrastructure

Fund (63) and Hydrogen Fueling Station Special Revenue Fund (55), respectively, are required until CEC revenue is received to implement hydrogen station upgrades and readiness efforts.

*Supervisor Benoit asked about the process for amending an award. Staff responded that since this was a competitive bid and the CEC has approved the augmentation, it was appropriate to make this adjustment.*

*Moved by Pulido; seconded by Benoit; unanimously approved.*

**2. Issue Program Announcement for School Bus Replacements and Retrofits **

Since 2001, the SCAQMD has replaced over 1,400 pre-1994 school buses and retrofitted nearly 3,400 school buses. The Carl Moyer AB 923 funds can be utilized for replacement and retrofit of school buses. This action is to approve the issuance of a Program Announcement to replace pre-1994 school buses with new alternative fuel buses and to retrofit 1994 to 2006 model year school buses with particulate traps.

*Councilmember Mitchell asked about the price of a new school bus and how much was funded by SCAQMD. Staff responded that the cost of a CNG bus with fire suppressant and sales tax was about \$175,000 of which we provide about 90% of the funds. Schools are required to provide \$15K per bus. Supervisor Benoit asked for the possibility of repowering the buses. Staff responded that the legislative language change has been proposed by CAPCOA, and staff is also scheduling site visits together with CARB staff to see the Complete Coach Works facility in Riverside where the refurbishment occurs.*

*Moved by Mitchell; seconded by Pulido; unanimously approved.*

**3. Adopt Resolution Recognizing Funds and Accepting Terms and Conditions for FY 2014-15 Carl Moyer Program Award, Issue Program Announcements for Carl Moyer Program and SOON Provision, and Execute and Amend Contracts**



These actions are to adopt a resolution recognizing \$25,523,118 in Carl Moyer Program grant awards from CARB under SB 1107 with its terms and conditions for FY 2014-15 and to approve the release of Program Announcements for the FY 2014-15 “Year 17” Carl Moyer Program and SOON Provision to provide incentive funding for low-emitting on- and off-road vehicles and equipment. Additionally, these actions are to execute contracts in the amount of \$2,533,900 from the Carl Moyer Program SB 1107 Fund (32) and amend contracts in the amount of \$199,659 from the Carl Moyer and Proposition 1B Programs.

*Moved by Mitchell; seconded by Pulido; unanimously approved.*



**4. Support Utility Electric Vehicle Charging Program**

Southern California Edison (SCE) has applied to the California Public Utilities Commission (CPUC) to conduct a two-phase electric vehicle charging implementation and market education program “Charge Ready.” The first phase is a pilot program, which is limited in scope with the total cost to be recovered from the ratepayer and intended to provide valuable information related to further deployment of infrastructure and ratepayer benefits. The second phase would implement a much larger number of charging stations over four years based on the results from the Phase 1 Pilot Program. This action is to convey to the CPUC the SCAQMD’s support of SCE’s “Charge Ready” Phase 1 Pilot Program.

*Moved by Mitchell; seconded by Pulido; unanimously approved.*

**5. Approve and Adopt Technology Advancement Office Clean Fuels Program Annual Report and Plan Update and Resolution and Receive and File Revised Membership of Technology Advancement Advisory Group **

Each year by March 31st, the Technology Advancement Office must submit to the California Legislative Analyst an approved Annual Report for the past year and a Plan Update for the current calendar year. Staff has reviewed the Clean Fuels Program with the Clean Fuels Advisory Group, the Technology Advancement Advisory Group and other technical experts. Additionally, the 2015 Clean Fuels Program Draft Plan Update was presented to the Board for review and comment at its December 5, 2014 meeting. This action is to approve and adopt the final Technology Advancement Office Clean Fuels Program Annual Report for 2014 and 2015 Plan Update as well as the resolution finding that proposed projects do not duplicate any past or present programs and to receive and file the revised membership of the Technology Advancement Advisory Group.

*Moved by Mitchell; seconded by Pulido; unanimously approved.*

**6. Other Business**

*Supervisor Benoit mentioned he had received a press release put out by the Health Effects Institute describing a recent study on the health effects of diesel exhaust. Staff replied they were aware of the study.*

**7. Public Comment Period**

*There was no public comment.*

**Next Meeting: March 20, 2015**

**Attachment**

Attendance

## Attachment A – Attendance

Supervisor John J. Benoit .....	SCAQMD Governing Board (via VT)
Councilmember Judith Mitchell .....	SCAQMD Governing Board
Mayor Miguel Pulido.....	SCAQMD Governing Board (via VT)
Mark Abramowitz.....	Board Consultant (Lyou)
Buford Crites .....	Board Consultant (JBenoit)
Andrew Silva .....	Board Consultant (Rutherford)
Mark Taylor.....	Deputy Chief of Staff (Rutherford)
Peter Greenwald, Senior Policy Advisor.....	SCAQMD
Jean Ospital, Health Effects Officer.....	SCAQMD
John Olvera, Principal Deputy District Counsel .....	SCAQMD
Matt Miyasato, STA .....	SCAQMD
Henry Hogo, STA.....	SCAQMD
Fred Minassian, STA .....	SCAQMD
Randall Pasek, STA .....	SCAQMD
Dean Saito, STA .....	SCAQMD
Ranji George, STA .....	SCAQMD
Drue Hargis, STA .....	SCAQMD
Patricia Kwon, STA.....	SCAQMD
Lisa Mirisola, STA .....	SCAQMD
Sam Atwood, Media .....	SCAQMD
Robert Paud, IM .....	SCAQMD
Donna Vernon, STA .....	SCAQMD
Pat Krayser, STA .....	SCAQMD
Danielle Robinson .....	ARB
Matt Essex .....	A-Z Bus Sales, Inc.
Ed Kendzierski .....	A-Z Bus Sales, Inc.
Susan Stark .....	Tesoro
Ivan Tether.....	Tether Law

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BOARD MEETING DATE: March 6, 2015

AGENDA NO. 25

REPORT: California Air Resources Board Monthly Meeting

SYNOPSIS: The California Air Resources Board met on February 19, 2015, in Sacramento. The following is a summary of this meeting.

RECOMMENDED ACTION:  
Receive and file.

Judith Mitchell, Member  
SCAQMD Governing Board

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The Air Resources Board's (ARB or Board) February meeting was held on February 19 in Sacramento at the California Environmental Protection Agency Headquarters Building. Key items presented are summarized below.

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Consent Items

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**1. Public Meeting to Consider a Minor Revision to the South Coast 2012 PM2.5 State Implementation Plan**

The Board approved a revision to the South Coast Air Basin 2012 PM2.5 State Implementation Plan to be submitted to the United States Environmental Protection Agency (U.S. EPA) as a revision to the California SIP. The revision will provide U.S. EPA the documentation needed to facilitate approval of the 2012 South Coast PM2.5 SIP under subpart 4 provisions of the Clean Air Act.

Discussion Items

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**1. Public Hearing to Consider the Adoption of Evaporative Emissions Control Requirements for Spark-Ignition Marine Watercraft**

The Board adopted a regulation for controlling evaporative emissions from spark-ignition marine watercraft. The regulation will harmonize with similar federal requirements, while adding specific provisions needed to support California's air quality needs. The emission control technology needed for this regulation is already being applied to on-land vehicles and therefore is cost-effective. The rule applies to new watercraft and has the support of major industry associations.

**2. Report to the Board on Intergovernmental Panel on Climate Change**

Climate expert, Susanne Moser, provided an update on the latest assessment of the scientific basis for climate change from the Intergovernmental Panel on Climate Change. The presentation documented the evolution of climate science and the current level of certainty the scientific community has in the anthropogenic causes of global warming. Dr. Moser also emphasized the importance of education and the necessity of California leadership to realize the national and worldwide changes needed to mitigate the severe consequences from climate change.

**3. Public Hearing to Consider a Low Carbon Fuel Standard**

The Board held the first of two hearings on the proposed re-adoption of the Low Carbon Fuel Standard (LCFS). The re-adoption will address State of California Court of Appeals' direction on California Environmental Quality Act and Administrative Procedure Act procedures for the standard and provide greater certainty and clarity in the regulation and its 2020 goal of reducing the carbon intensity of the transportation fuel pool by 10 percent. The second hearing will occur in the summer and complete the environmental review process and the external review of the carbon intensity tools.

**SCAQMD Staff Comments/Testimony:** Staff provided oral testimony to support the re-adoption of the Low Carbon Fuel Standard (LCFS). Staff commented that this regulation incentivizes not only low carbon fuels but also fuels and technologies that capture the co-benefits of reduced criteria pollutants, specifically particulates, toxics and especially NOx emissions, which are so desperately needed in the South Coast region to achieve the

federal standards. Staff urged the Board to adopt the CARB staff recommendation on the LCFS when the item comes back for their vote.

#### **4. Public Hearing to Consider the Proposed Regulation for the Commercialization of Alternative Diesel Fuels.**

The Board also held the first of two hearings on a proposed regulation governing the introduction of alternative diesel fuels (ADF) into the California commercial market. The ADF regulation works with the LCFS to enhance the development and penetration of low carbon ADFs. The benefits of the ADFs include lower NO<sub>x</sub> and PM emissions, decreased toxic risks, and lower greenhouse gas emissions. This regulation will help California achieve the LCFS 2020 and the Governor's 2030 50 percent renewable energy goals.

**SCAQMD Staff Comments/Testimony:** Similar to the previous item, staff provided oral testimony to support the Alternative Diesel Fuels (ADF) regulation with the same rationale: the region needs more NO<sub>x</sub> emission reductions, and this regulation will ensure that NO<sub>x</sub> does not increase with higher blends of biodiesel in older engines. Staff also thanked CARB staff for continuing to work with the SCAQMD to resolve the potential NO<sub>x</sub> increase issue. Staff urged the Board to adopt the CARB staff recommendation on the ADF when the item comes back for their vote.

#### **Attachment**

CARB February 19, 2015 Meeting Agenda

**LOCATION:**

Air Resources Board  
Byron Sher Auditorium, Second Floor  
1001 I Street  
Sacramento, California 95814  
<http://www.calepa.ca.gov/EPAbldg/location.htm>

**PUBLIC MEETING AGENDA**

**February 19, 2015**

[Webcast](#)

This facility is accessible by public transit. For transit information, call (916) 321-BUSS, website: <http://www.sacrt.com>  
(This facility is accessible to persons with disabilities.)

**TO SUBMIT WRITTEN COMMENTS ON AN AGENDA ITEM IN ADVANCE OF THE MEETING GO TO: <http://www.arb.ca.gov/lispub/comm/bclist.php>**

**Thursday  
February 19, 2015  
9:00 a.m.**

**CONSENT CALENDAR:**

The following item on the consent calendar will be presented to the Board immediately after the start of the public meeting, unless removed from the consent calendar either upon a Board member's request or if someone in the audience wishes to speak on it.

**Consent Item #**

**15-2-1: Public Meeting to Consider a Minor Revision to the South Coast 2012 PM2.5 State Implementation Plan**

*Staff will propose to the Board a minor revision to the South Coast Air Basin 2012 PM2.5 State Implementation Plan (SIP). If approved, it will be submitted to the United States Environmental Protection Agency as a revision to the California SIP and will provide the documentation to facilitate approval of the 2012 South Coast PM2.5 SIP.*

[More Information](#)

[Proposed Resolution](#)

**DISCUSSION ITEMS:**

**Note:** The following agenda items may be heard in a different order at the Board meeting.

**Agenda Item #**

**15-2-2: Public Hearing to Consider the Adoption of Evaporative Emissions Control Requirements for Spark-Ignition Marine Watercraft**

*Staff will present to the Board a proposed regulation for controlling evaporative emissions from spark-ignition marine watercraft. The proposed regulation will harmonize, to the extent feasible, with similar federal requirements, while adding specific provisions needed to support California's air quality needs.*

[More Information](#)

[Staff Presentation](#)

**15-2-5: Report to the Board on Intergovernmental Panel on Climate Change**

*A climate expert will provide an update on the latest assessment of the scientific basis for climate change from the Intergovernmental Panel on Climate Change. Topics to be covered include the most important findings on the physical science basis, impacts, mitigation, and adaptation to climate change on both global and regional scales, with an emphasis on California findings.*

[More Information](#)

[Susanne Moser's Presentation](#)

**15-2-4: Public Hearing to Consider a Low Carbon Fuel Standard**

*Staff will present to the Board a proposed regulation for a Low Carbon Fuel Standard that includes re-adoption of the existing Low Carbon Fuel Standard with updates and revisions. This is the first of two hearings on the item, and the Board will not take action to approve the proposed regulation.*

[More Information](#)

[Staff Presentation](#)

**15-2-3: Public Hearing to Consider the Proposed Regulation for the Commercialization of Alternative Diesel Fuels**

*Staff will present to the Board a proposed regulation governing the introduction of alternative diesel fuels into the California commercial market, including special provisions for biodiesel. This is the first of two hearings on the item, and the Board will not take action to approve the proposed regulation.*

[More Information](#)

[Staff Presentation](#)

**CLOSED SESSION**

*The Board will hold a closed session, as authorized by Government Code section 11126(e), to confer with, and receive advice from, its legal counsel regarding the following pending or potential litigation, and as authorized by Government Code section 11126(a):*

*POET, LLC, et al. v. Corey, et al., Superior Court of California (Fresno County), Case No. 09CECG04850; plaintiffs' appeal, California Court of Appeal, Fifth District, Case No. F064045; California Supreme Court, Case No. S213394. [remanded to trial court].*

*Rocky Mountain Farmers Union, et al. v. Corey, U.S. District Court (E.D. Cal. Fresno), Case No. 1:09-CV-02234-LJO-DLB; ARB interlocutory appeal, U.S. Court of Appeals, Ninth Circuit, Case No. 09-CV-02234 [remanded to trial court].*

*American Fuels and Petrochemical Manufacturing Associations, et al. v. Corey, et al., U.S. District Court (E.D. Cal. Fresno), Case No. 1:10-CV-00163-AWI-GSA; ARB's interlocutory appeal, U.S. Court of Appeals, Ninth Circuit, Case No. 10-CV-00163 [remanded to trial court].*

*California Dump Truck Owners Association v. Nichols, U.S. District Court (E.D. Cal. Sacramento), Case No. 2:11-CV-00384-MCE-GGH; plaintiffs' appeal, U.S. Court of Appeals, Ninth Circuit, Case No. 13-15175.*

*Engine Manufacturers Association v. California Air Resources Board, Sacramento Superior Court, Case No. 34-2010-00082774; ARB's appeal, California Court of Appeal, Third District, Case No. C071891. EMA Petition for Review, California Supreme Court, Case No. S223544.*

*Truck and Engine Manufacturers Association v. California Air Resources Board*, Sacramento Superior Court, Case No. 34-2013-00150733.

*Alliance of Automobile Manufacturers v. California Air Resources Board*; Sacramento Superior Court, Case No. 34-2013-00152974.

*Citizens Climate Lobby and Our Children's Earth Foundation v. California Air Resources Board*, San Francisco Superior Court, Case No. CGC-12-519554, plaintiffs' appeal, California Court of Appeal, First District, Case No. A138830.

*California Chamber of Commerce et al. v. California Air Resources Board*, Sacramento Superior Court, Case No. 34-2012-80001313; plaintiffs' appeal, California Court of Appeal, Third District, Case No. C075930.

*Morning Star Packing Company, et al. v. California Air Resources Board, et al.*, Sacramento Superior Court, Case No. 34-2013-800001464; plaintiffs' appeal, California Court of Appeal, Third District, Case No. C075954.

*Delta Construction Company, et al. v. United States Environmental Protection Agency*, U.S. Court of Appeals, District of Columbia Circuit, Case No. 11-1428.

*Alliance for California Business v. Nichols et al.*, Glenn County Superior Court, Case No. 13CV01232.

*Dalton Trucking, Inc. v. United States Environmental Protection Agency*, U.S. Court of Appeals, District of Columbia Circuit, Case No. 13-1283.

*Owner-Operator Independent Drivers Association Inc. et al. v. Richard W. Corey et al.*, U.S. District Court, (E.D. Cal. Fresno) Case No. 1:13-CV-01998-LJO-SAB (transferred by court to E.D.Cal. Sacramento, Case No. 2:14-CV-00186-MCE-AC).

*John R. Lawson Rock & Oil, Inc. et al. v. California Air Resources Board et al.*, Fresno County Superior Court, Case No. 14-CECG01494.

*Transportation Solutions Defense and Education Fund v. California Air Resources Board*, Fresno County Superior Court, Case No. 14CECG01788 (plaintiff's transfer to Sacramento Superior).

*California Nozzle Specialists, Inc. v. California Air Resources Board*, Los Angeles County Superior Court, Case No. BC564965.

*California Air Resources Board v. BP West Coast Products LLC*, Contra Costa County Superior Court, Case No. C12-00567.

#### **OPPORTUNITY FOR MEMBERS OF THE BOARD TO COMMENT ON MATTERS OF INTEREST**

*Board members may identify matters they would like to have noticed for consideration at future meetings and comment on topics of interest; no formal action on these topics will be taken without further notice.*

#### **OPEN SESSION TO PROVIDE AN OPPORTUNITY FOR MEMBERS OF THE PUBLIC TO ADDRESS THE BOARD ON SUBJECT MATTERS WITHIN THE JURISDICTION OF THE BOARD**

*Although no formal Board action may be taken, the Board is allowing an opportunity to interested members of the public to address the Board on items of interest that are within the Board's jurisdiction, but that do not specifically appear on the agenda. Each person will be allowed a maximum of three minutes to ensure that everyone has a chance to speak.*



**TO ELECTRONICALLY SUBMIT WRITTEN COMMENTS ON AN AGENDA ITEM IN ADVANCE OF THE MEETING GO TO:**

<http://www.arb.ca.gov/lispub/comm/bclist.php>

(Note: not all agenda items are available for electronic submittals of written comments.)

**IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT THE CLERK OF THE BOARD:**

**1001 I Street, 23<sup>rd</sup> Floor, Sacramento, California 95814**

**(916) 322-5594**

**ARB Homepage: [www.arb.ca.gov](http://www.arb.ca.gov)**

**SPECIAL ACCOMMODATION REQUEST**

Consistent with California Government Code Section 7296.2, special accommodation or language needs may be provided for any of the following:

- An interpreter to be available at the hearing;
- Documents made available in an alternate format or another language;
- A disability-related reasonable accommodation.

To request these special accommodations or language needs, please contact the Clerk of the Board at (916) 322-5594 or by facsimile at (916) 322-3928 as soon as possible, but no later than 7 business days before the scheduled Board hearing. TTY/TDD/Speech to Speech users may dial 711 for the California Relay Service.

Consecuente con la sección 7296.2 del Código de Gobierno de California, una acomodación especial o necesidades lingüísticas pueden ser suministradas para cualquiera de los siguientes:

- Un intérprete que esté disponible en la audiencia
- Documentos disponibles en un formato alterno u otro idioma
- Una acomodación razonable relacionados con una incapacidad

Para solicitar estas comodidades especiales o necesidades de otro idioma, por favor llame a la oficina del Consejo al (916) 322-5594 o envíe un fax a (916) 322-3928 lo más pronto posible, pero no menos de 7 días de trabajo antes del día programado para la audiencia del Consejo. TTY/TDD/Personas que necesiten este servicio pueden marcar el 711 para el Servicio de Retransmisión de Mensajes de California.

BOARD MEETING DATE: March 6, 2015

AGENDA NO. 26

**TITLE:** Proposed Work Plan for Implementing Office of Environmental Health Hazard Assessment's Revised Air Toxics Hot Spots Program Risk Assessment Guidelines

**SYNOPSIS:** The Office of Environmental Health Hazard Assessment (OEHHA) has revised the Air Toxics Hot Spots Program Risk Assessment Guidelines. The guidelines are designed to improve the way the state estimates potential lifetime health risk from air toxics and makes adjustments based on new science about both increased childhood exposure to and sensitivity to air toxics. The SCAQMD's permitting program, AB2588 Hot Spots program, existing regulatory program, and CEQA guidelines rely on OEHHA's guidelines for assessing health risks. As such, implementing the Revised Guidelines will have a variety of implications for SCAQMD's air toxics program. Staff will present to the Board a Work Plan to implement the revised OEHHA guidelines.

**COMMITTEE:** No Committee Review

**RECOMMENDED ACTIONS:**

Direct staff to implement enhanced outreach and risk communication activities and proceed with the development of adjustments to SCAQMD's various programs related to Risk Assessment through the appropriate Committee and Governing Board approval process.

Barry R. Wallerstein, D.Env.  
Executive Officer

## **Background**

The SCAQMD has a comprehensive air toxics program that includes rules for new and modified equipment, implementation of the AB2588 Hot Spots Program for existing sources, source-specific toxic rules, and guidance for determining health impacts from CEQA documents. Since adoption of these programs, businesses throughout the Basin have made significant reductions in air toxics from a variety of sources. Based on the most recent Multiple Air Toxics Study, **cancer risks have decreased between 75 and 87 percent** from 1990 levels from non-diesel sources depending on the monitoring location.

## **The Revised OEHHA Guidelines**

The SCAQMD's air toxics program relies on calculating health risks based on the Health Risk Assessment Guidance developed by the Office of Environmental Health Hazard Assessment (OEHHA). The Hot Spots Act requires that OEHHA develop health risk assessment guidelines for implementation of the Hot Spots program (Health and Safety Code Section 44360(b)(2)). OEHHA is in the final stages of revising its Health Risk Assessment Guidelines (Revised OEHHA Guidelines), which are expected to be finalized in early March. In addition, CARB and the California Air Pollution Control Officers Association (CAPCOA) are jointly developing guidance for risk management for permitting and AB2588. The CARB Board will consider approval of the Risk Management Guidelines for Permitting and AB2588 in April.

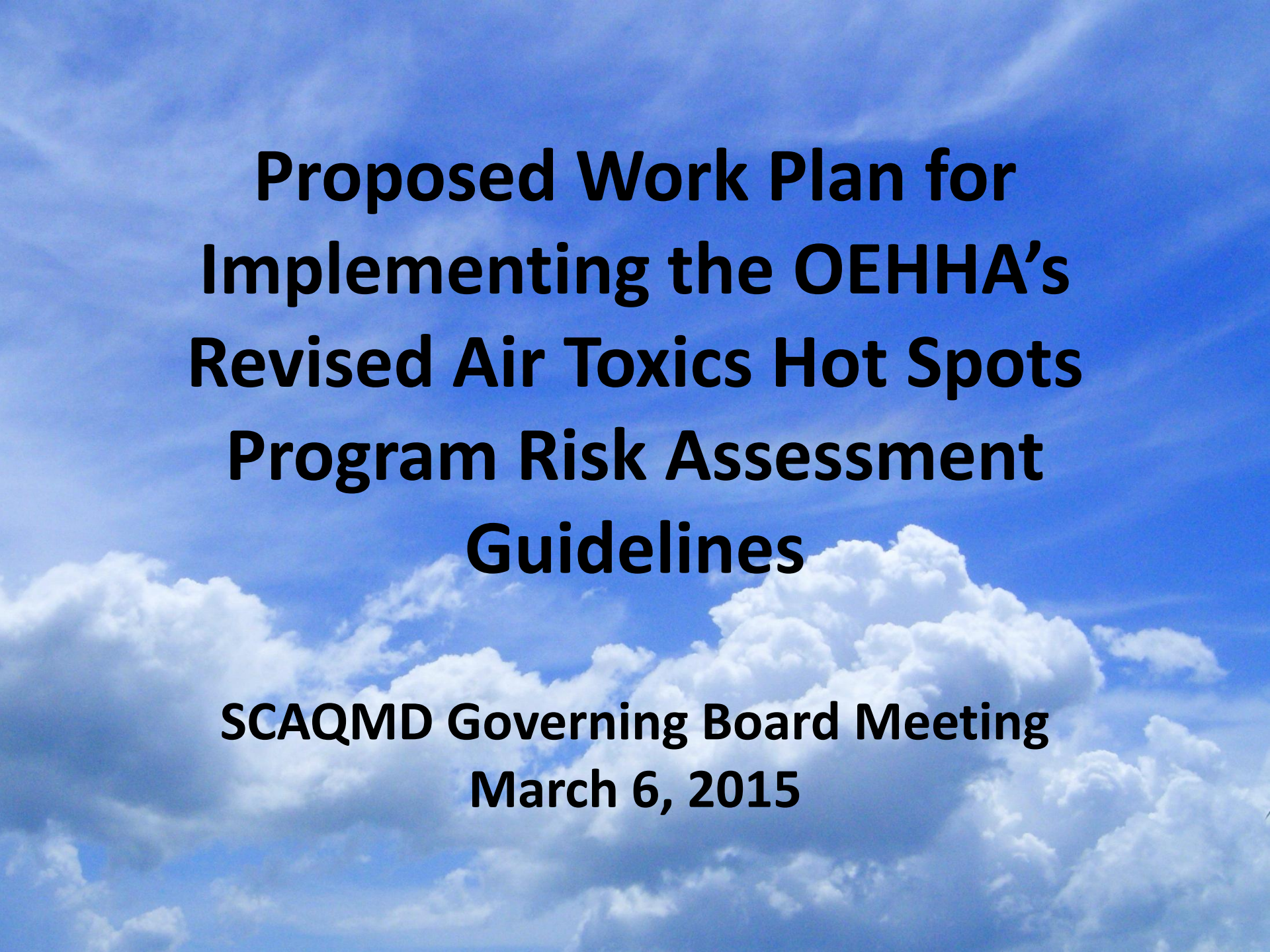
The Revised OEHHA Guidelines for risk assessment contain revisions that incorporate new scientific information that has shown that early-life exposures to air toxics contribute to an increased lifetime risk of developing cancer and other adverse health effects, compared to exposures that occur in adulthood. As a result, the Revised OEHHA Guidelines incorporate age sensitivity factors which will increase cancer risk estimates to residential and sensitive receptors by approximately 3 times, and more than 3 times in some cases depending on whether the toxic air contaminant has multiple pathways of exposure in addition to inhalation. Health risks for off-site worker receptors are similar between the existing and revised methodology because the methodology for adulthood exposures remains relatively unchanged.

## **Implications of Revised OEHHA Guidelines for SCAQMD's Air Toxics Program**

The SCAQMD's air toxics program relies on OEHHA's health risk assessment guidelines in all aspects of its toxics regulatory program. At the Special Governing Board Meeting on May 16, 2014, staff presented Potential Impacts of the New OEHHA Risk Guidelines on SCAQMD Programs. To begin implementing the Revised OEHHA Guidelines, amendments to key rules, Rule 1401 – New Source Review of Toxic Air Contaminants, Rule 212 – Standards for Approving Permits and Issuing Public Notice, and Rule 1402 – Control of Toxic Air Contaminants from Existing Sources, will be recommended. Staff will be presenting a generalized work plan and schedule for implementation of the Revised OEHHA Guidelines at this Governing Board Meeting.

**Next Steps**

SCAQMD staff will begin an extensive outreach and communication effort to engage all stakeholders regarding the Revised OEHHA Guidelines immediately. As part of the work plan, staff will host three Public Workshops in March throughout the Basin. SCAQMD staff will also continue to work with CARB and CAPCOA on a statewide outreach and communication effort to promote consistent and accurate messaging. It is expected that CARB will approve the Risk Management Guidelines for Permitting and AB2588 in April. SCAQMD staff will be presenting a generalized work plan at this Governing Board meeting that will include outreach and communication elements, and a proposed schedule for implementation of the Revised OEHHA Guidelines for permitting, AB2588, and CEQA purposes. Any rule development efforts will include a public process to enable stakeholder participation and input. Throughout the implementation process of the Revised OEHHA Guidelines, staff will provide periodic updates to the Stationary Source Committee.



**Proposed Work Plan for  
Implementing the OEHHA's  
Revised Air Toxics Hot Spots  
Program Risk Assessment  
Guidelines**

**SCAQMD Governing Board Meeting  
March 6, 2015**



# OEHHA Revised Risk Guidance

- SB 25 required that the special susceptibility of infants and children be considered in assessing the health risks associated with air toxics
- Office of Environmental Health Hazard Assessment (OEHHA) revising Risk Assessment Guidelines
  - Incorporates new studies on childhood sensitivity
  - Incorporates new data on exposure (e.g. breathing rate and time at home)
- Cancer risk estimates for *residential* exposures will increase ~3 times (some cases 6 times higher)
- Cancer risk estimates for worker exposure no substantial change

# OEHHA Revised Risk Guidelines

## Impact On Cancer Risk



### No Change

Quantification of  
Facility  
Emissions –  
(No Increase in  
Toxic Emissions)



### Revised

Methodology  
for Estimating  
Cancer Risk  
(Childhood  
sensitivities and  
breathing rates)



Residential / Sensitive  
Receptor Cancer Risk  
**(Increased)**



Worker Receptor  
Cancer Risk  
**(Slight Change)**

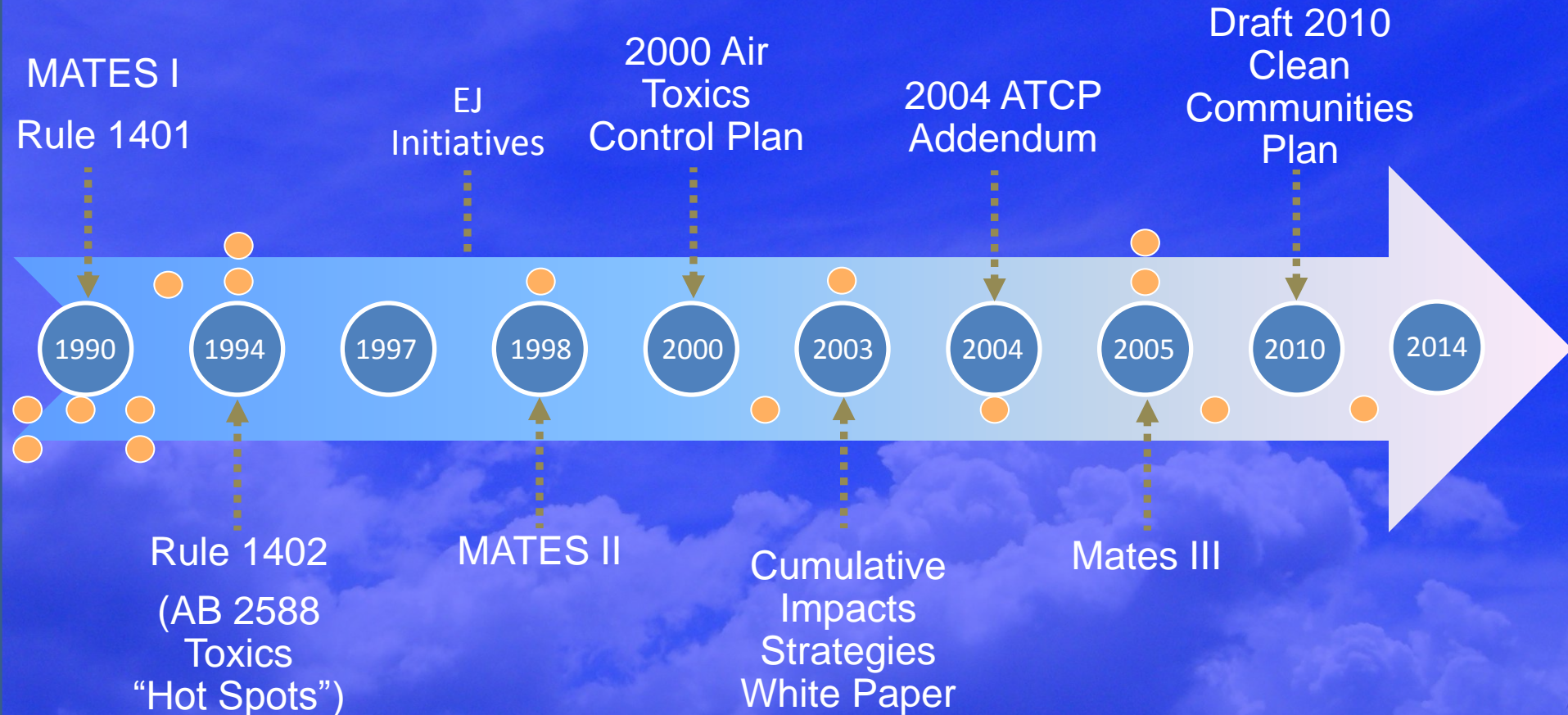
# “Umbrella Toxics Rules”



- Rule 1401 – Toxic requirements for new and modified permitted sources
- Rule 1401.1 – Toxic requirements for new and modified permitted sources near schools
- Rule 1402 – Toxic requirements for existing facilities
- Rule 212 – Noticing for new and modified permitted sources



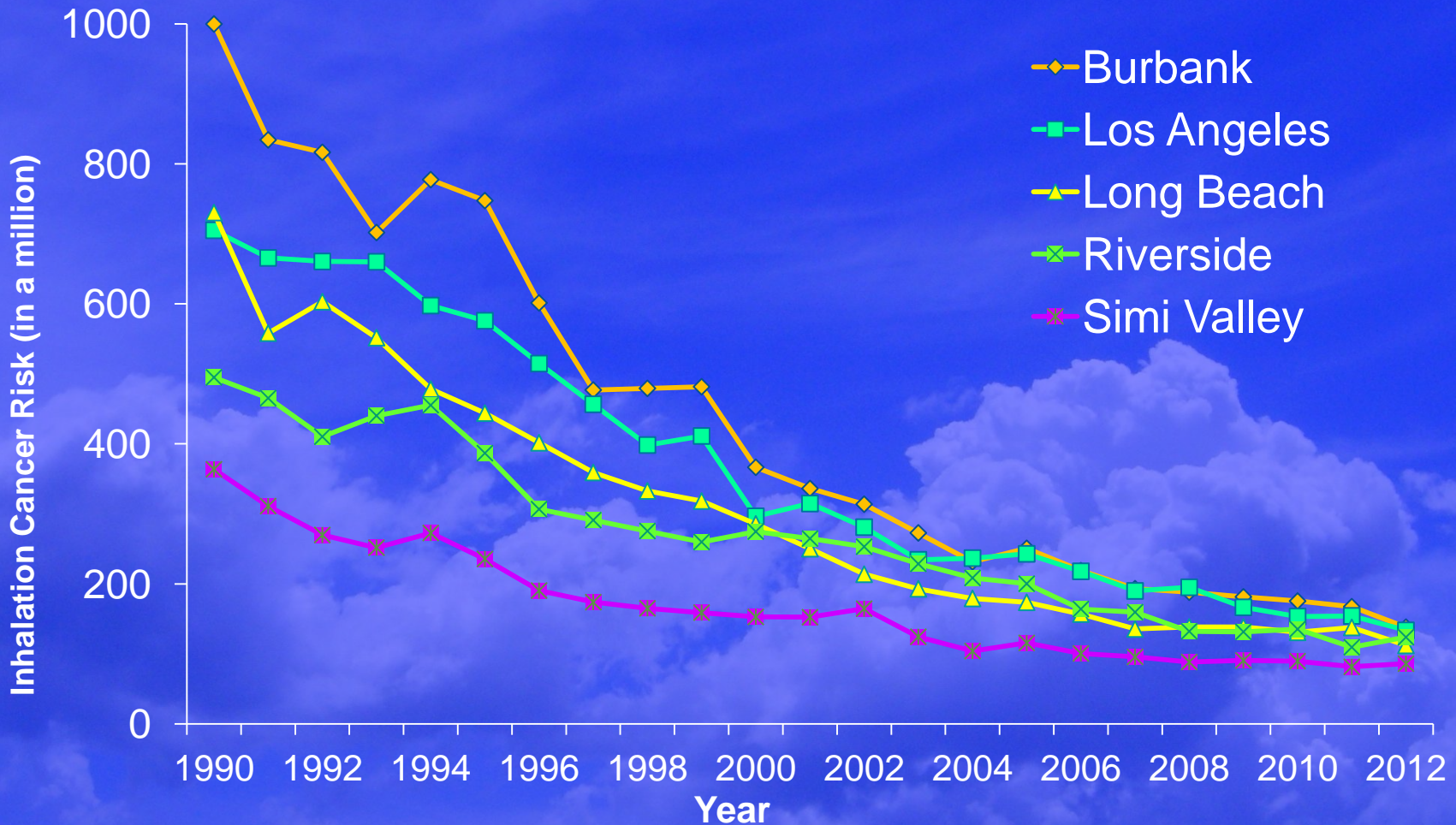
# SCAQMD's Air Toxics Program



● Represents adoption of a stationary source-specific toxic rule



# Trends in Cancer Risks Since 1990 (Excludes diesel PM)





# Risk Assessment & Risk Management

**Risk  
Assessment**

**Risk  
Management**





# Process

**March  
2015**

- OEHHA Approves Revised Guidelines
- HARP 2\* to be Released to Public

**April  
2015**

CARB and CAPCOA Approve Risk Management Guidelines

**Air Districts  
Implement  
Guidelines**

\* Hot Spots Assessment Reporting Program 2 (HARP 2) will incorporate new air dispersion model AERMOD and the Revised OEHHA Guidelines.

# Affected Programs

## Permitting

- Rule 1401 – New and Modified Permitted Sources
- Rule 1401.1 – New and Relocated Facilities Near Schools

## AB2588

- AB2588 Core Facilities
- AB2588 Industry-Wide Facilities
- Rule 1402 – Control of Toxic Air Contaminants from Existing Sources

## Revised OEHHA Guidance

## Public Noticing

- Rule 212 – New or modified permits
- AB2588 Facilities

## CEQA

- Air Toxics Analysis for
  - Construction Phases
  - Operational Phases



# Near-Term Needs

Interim permitting provisions for specific source categories

- Amend Rule 1401
- Develop source-specific rules, if needed
- Update supporting materials

Address inconsistencies with Revised OEHHA Guidelines

- Amend Rule 1401 and 1401.1
- Amend Rule 1402
- Amend Rule 212

Implement AB2588 using Revised OEHHA Guidelines

- Amend Rule 1402
- Revise Prioritization Procedures
- Revise Public Notification Guidelines

Policy for CEQA Projects

- Develop guidance for CEQA Guidelines
- Implement SCAQMD Lead Agency Projects first

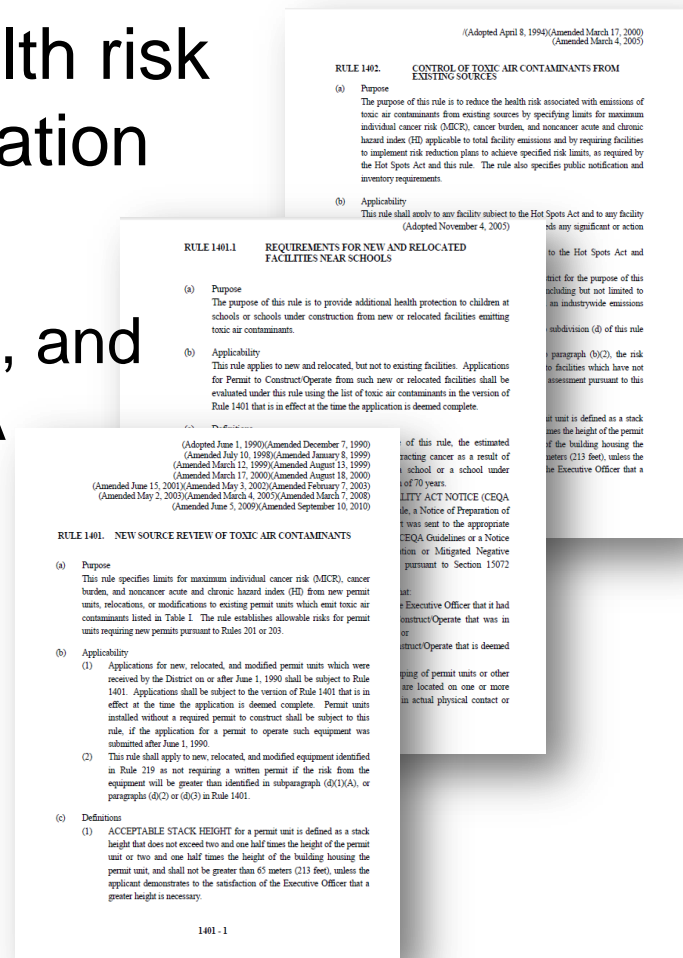


# Permitting

- Interim provisions may be needed for specific source categories that cannot meet Rule 1401 risk limits
- Recommendation:
  - Amend Rule 1401 to narrowly provide temporary relief from Revised OEHHA Guidelines for new and modified sources that cannot be permitted, if needed (No backsliding)  
*Schedule: May 2015*

# Rule Amendments to Address Inconsistencies

- Rules 1401, 1401.1, 1402, and 212 include references based on current health risk guidelines such as exposure duration
  - Recommendation:
    - Amend Rules 1401, 1401.1, 1402, and 212 to reference Revised OEHHA Guidelines
- Schedule: May 2015*





# AB2588

- Health risk assessments required under Toxics Hot Spots Program shall be prepared in accordance with Guidelines established by OEHHA (Health and Safety Code §(b)(2))
  - SCAQMD must use Revised OEHHA Guidelines for HRAs under the Hot Spots Program
- Recommendation:
  - All HRAs not yet approved will be required to use Revised OEHHA Guidelines

# AB2588 (*Continued*)

- Other action items to implement Revised OEHHA Guidelines:
    - Update Supplemental HRA Guidelines for AB2588
    - Revise Prioritization Procedures
    - Revise AB2588 Public Notification Procedures
- Schedule: May 2015*

# CEQA

- Revised OEHHA Guidelines will affect construction and operational phases, particularly diesel and mobile sources
- SCAQMD's CEQA Handbook references Rule 1401 for risk assessment methodology
- Recommendation:
  - Reference Revised OEHHA Guidelines
  - Develop recommendations for use of Revised OEHHA Guidelines for CEQA Projects (Risk management decisions –Governing Board)
  - Implement SCAQMD Lead agency projects first, then other lead agency projects
  - *Schedule: May 2015*



# Outreach and Communication

- CARB and CAPCOA to develop a statewide outreach and communication effort
- Messaging is important – Air toxic emissions have not increased, state has changed how air toxics risks are estimated
- Recommendation:
  - Initiate public workshops throughout the Basin in March
  - Conduct individual stakeholder meetings
  - Develop outreach and communication materials
  - Continue working with CARB and CAPCOA to develop a statewide outreach and communication effort

# General Timeline



OEHHA Approve Revised Guidelines  
Public Release of HARP2



Approve Risk Management  
Guidelines

Mar 2015    May 2015    Aug 2015    Oct 2015    Jan 2016    Apr 2016    Aug 2016    Oct 2016

**Outreach, Communication and Training**

**Permitting**

**CEQA**

**AB2588**

# Recommended Action

- Implement enhanced outreach and risk communication activities
- Proceed with development of adjustments to SCAQMD's various programs related to Risk Assessment
- Updates to the Stationary Source Committee during rule development process





BOARD MEETING DATE: March 6, 2015

AGENDA NO. 27

PROPOSAL: Proposed Comments on U.S. EPA's Proposed Ozone Standard

SYNOPSIS: In November of 2014, U.S. EPA proposed to tighten the National Ambient Air Quality Standard (NAAQS) for 8-hour ozone from the current 75 ppb to a range of 65-70 ppb. The proposal also includes potential changes to the monitoring requirements for ozone and its precursors. Staff is recommending submitting comments to U.S. EPA similar to Board-approved comments submitted in 2010 when U.S. EPA proposed a similar standard that was never finalized. Additional comments are also recommended. This action is to seek Board approval to resubmit the original Board-approved comments, as well as the new supplemental comments, to U.S. EPA regarding their proposed revision to the NAAQS for ozone.

COMMITTEE: Mobile Source, February 20, 2015; Recommended for Approval, with suggested changes

**RECOMMENDED ACTION:**

Approve resubmittal of original Board-approved comments, as well as new supplemental comments, to U.S. EPA on the proposed revision to the National Ambient Air Quality Standards for ozone (Attachment).

Barry R. Wallerstein, D.Env.  
Executive Officer

BB EC:PF:MK

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**Background**

Draft comment letter is attached.

**Attachment**

Draft March 2015 Comment Letter with original March 2010 Board-approved comment letter as an Exhibit



**- DRAFT -**  
**ATTACHMENT**

*Office of the Executive Officer  
Barry R. Wallerstein, D.Env.  
909.396.2100, fax 909.396.3340*

March 11, 2015

Docket ID No. EPA-HQ-OAR-2008-0699  
U.S. Environmental Protection Agency  
Mailcode 28221T  
1200 Pennsylvania Avenue, N.W.  
Washington, DC 20460

*Via internet:* <http://www.regulations.gov/>  
*Via email:* [A-and-R-Docket@epa.gov](mailto:A-and-R-Docket@epa.gov)

Re: Comments of the South Coast Air Quality Management District Staff concerning Proposed Rule for Revision of the National Ambient Air Quality Standards for Ozone published in the Federal Register (FR 75233; December 17, 2014)

The South Coast Air Quality Management District (SCAQMD) is the air pollution control agency for the Los Angeles metropolitan region comprised of Orange County, the non-desert portions of Los Angeles and San Bernardino counties and Riverside county to the eastern edge of the Coachella Valley. Our jurisdiction is home to 16 million people which constitute approximately five percent of the U.S. population. The SCAQMD staff has reviewed the proposed revisions to the primary and secondary National Ambient Air Quality Standards (NAAQS) for Ozone and is providing the following comments.

The need to retain or revise the current ozone standard relies on available scientific evidence for ozone-attributable health effects and on analyses of population exposures and health risks. The Clean Air Scientific Advisory Committee (CASAC), U.S. EPA's statutorily-established advisory group, unanimously concluded "the evidence from controlled human and epidemiological studies strongly supports the selection of a new primary ozone standard within the 60-70 ppb range for an 8-hour averaging time." The current proposed rule will lower the ozone NAAQS to a level in the range of 65 to 70 ppb. The SCAQMD supports setting the standard at a level consistent with the scientific evidence.

On March 19, 2010, the SCAQMD staff submitted a Governing Board-approved comment letter on the previous proposed revision to the ozone NAAQS that was never finalized by the U.S. EPA. The SCAQMD is resubmitting those comments as they are still applicable to the current proposed

**- DRAFT -**

rule to revise the ozone NAAQS. The March 2010 comment letter is attached (Exhibit) and includes the items below.

- Support for setting the standards based on the scientific evidence and the recommendations from CASAC
- Implementation rules need to be re-evaluated to ensure:
  - ✓ Workable attainment dates
  - ✓ Fair-share reductions from federal sources
  - ✓ Research, development and deployment of zero-emitting technologies
  - ✓ Integrated State Implementation Plan (SIP) for all-pollutants

**It is important to note that the “workable attainment dates” and “fair share reductions from federal sources” are critical issues and must be ensured through the implementation rule.**

Specifically, as stated in the March 2010 comment letter, “If there is one thing that is absolutely clear, it is that the SCAQMD cannot demonstrate attainment with the proposed ozone standard range without fair share reductions in federal source emissions. These include emission reductions from ships, railroads, aircraft, and 49 state heavy-duty trucks. These reductions must be enforceable commitments.”

In addition to the attached letter, SCAQMD staff is providing the following additional comments on the proposed rule.

### **Exceptional Events**

SCAQMD staff appreciate the language in the proposed rule recognizing the applicability of the Exceptional Events Rule to ozone exceedances, especially those related to wildfire and stratospheric intrusions. However, SCAQMD staff would like to reiterate the need for streamlining and flexibility in the exceptional event submittal and review process. Given the complex nature of ozone exceptional events and the potential for more events with the proposed lower ozone standard, additional streamlining of exceptional event review process is required. SCAQMD stands ready to work with U.S.EPA in this regard.

### **International Transport/Background Ozone**

SCAQMD staff also appreciate the acknowledgement of the importance of pollutant transport, especially international transport, and background concentrations to measured ozone levels. Background concentrations will be a more significant factor given a lower ozone standard in many areas, including the South Coast Air Basin. We would like to stress the need for clear and consistent guidance as to how to address background transport in air quality plan submittals, both in the treatment of measured air quality data and in protocols for attainment demonstration modeling.

### **Monitoring Requirements (PAMS Program)**

SCAQMD staff are supportive of the proposed changes to the Photochemical Assessment Monitoring Stations (PAMS) program, especially the flexibility provided by enhanced monitoring plans designed to meet local objectives and achieve a better understanding of photochemical precursors. We support the prioritization of non-attainment areas based on the greatest human

**- DRAFT -**

health impacts and thus support the threshold of 1 million people or more to be included as a criteria for PAMS site locations. Also, consistent with human health impact as a priority, SCAQMD staff recommend the inclusion of the severity of non-attainment as a consideration for PAMS resource allocations. Ozone non-attainment areas that are projected to attain the standard without additional state-level actions may not need the PAMS resources and additional monitoring to develop a better understanding of their ozone issues.

SCAQMD staff support the movement towards hourly PAMS VOC speciated measurements, with flexibility to use canisters if programmatic or logistical needs indicate. We support a mechanism within the annual network plan or written correspondence with U.S. EPA regional offices to be sufficient for approval of changes to monitoring plans. As there may be some limitations to the hourly speciated VOC measurements, the required target compound lists should be consistent with the capabilities of the instrumentation.

SCAQMD staff appreciate that the proposed PAMS design recognizes the importance of meteorological measurements in fully realizing the potential of the PAMS program. By allowing flexibility in upper air meteorological measurement methods, with mixing height as a minimum requirement, local agencies can provide reasonably useful data for modeling and analysis. Areas with complex ozone problems or complex terrain will likely need more upper air measurements.

Regarding the deadlines for submitting the proposed requirements in the annual network plans by July 2016, SCAQMD staff suggest that the PAMS funding allocations be defined with enough time for agencies to develop an appropriate plan, at least a few months before the plans are due. Furthermore, according to the proposed rule, the enhanced monitoring plan needs to be implemented by January 1, 2017, giving very little time from network plan approval (expected by November 2016) to actually implement the plan.

Meeting the proposed ozone standard in the South Coast Air Basin will be a significant challenge. SCAQMD is committed to providing the public a healthy environment and economy. If you have any questions, please feel free to contact me at (909) 396-2100 or Dr. Elaine Chang, Deputy Executive Officer, at (909) 396-3186.

Sincerely,

Barry R. Wallerstein, D.Env.  
Executive Officer

Attachment: Exhibit

cc: Elaine Chang, SCAQMD  
Barbara Baird, SCAQMD  
Philip Fine, SCAQMD

EXHIBIT



# South Coast Air Quality Management District

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

*Office of the Executive Officer  
Barry R. Wallerstein, D.Env.  
909.396.2100, fax 909.396.3340*

March 19, 2010

Docket ID No. EPA-HQ-OAR-2005-0172  
U.S. Environmental Protection Agency  
Mail code 6102T  
1200 Pennsylvania Avenue, N.W.  
Washington, DC 20460

Via internet: [www.regulations.gov](http://www.regulations.gov)  
Via email: [a-and-r-Docket@epa.gov](mailto:a-and-r-Docket@epa.gov)

Re: Comments of the South Coast Air Quality Management District Staff concerning the Proposed Rule for Revision of the National Ambient Air Quality Standards for Ozone published in the Federal Register (FR 172938; January 19, 2010).

The South Coast Air Quality Management District (SCAQMD) staff is pleased to present these comments regarding the Proposed Rule for the National Ambient Air Quality Standards for Ozone.

The SCAQMD is the air pollution control agency for Orange County and non-desert portions of Los Angeles, San Bernardino, and Riverside counties. The SCAQMD is home to more than 16 million people – about 5% of the U.S. population.

### **SCAQMD Staff Supports U.S. EPA's Health-based Air Quality Standard Setting**

It is the long-standing policy of the SCAQMD that ambient air quality standards should be set to protect public health, as called for by Congress in the Clean Air Act. We concur with the Administrator's evaluation of currently available health studies.

In comments provided in 2007 regarding the ozone standards review, SCAQMD staff strongly urged the then Administrator to adopt a new, protective standard that was consistent with the recommendations of the U.S. EPA's Clean Air Scientific Advisory Committee. We do so again.

This would mean a primary standard averaged for 8 hours of no greater than 0.070 ppm. We note that a not-to-be-exceeded standard at this level has already been adopted by the California Air Resources Board to protect public health.

### **Once the Standard is Set, Current Implementation Rules Need to be Re-evaluated**

Although we support the proposed revision of the ozone standards based on the body of scientific information, we wish to convey to the Administrator several opportunities to better meet the challenges of implementing the standard within the proposed range of 0.060 to 0.070 ppm in the South Coast Air Basin (SCAB). The issues are listed below, and briefly expanded upon in the following discussion.

- Attainment dates based on air quality classification under the current Clean Air Act timetable may not be workable when the standard approaches the background level
- The standards cannot be attained without fair-share reductions from federal sources of ozone precursors
- EPA should foster opportunities for coordinated research and development to move toward zero emitting technologies in the transportation sector
- State Implementation Plan (SIP) preparation should be integrated for all pollutants, rather than a piecemeal, pollutant by pollutant approach

### **Background**

The SCAB is known to have the worst ozone air quality in the nation, and 25% of nation-wide unhealthy ozone exposure based on the 1997 8-hour standard occurs in the SCAQMD. Current and projected ozone levels are shown in the following table. The design value for the primary 8-hour standard is 119 ppb. Based on the modeling analysis used in the SCAQMD's 2007 Air Quality Management Plan (AQMP), we estimate the background (without anthropogenic emissions) 8-hour value at 48 ppb. In order to address both PM<sub>2.5</sub> and ozone standards, the 2007 AQMP focuses on a NO<sub>x</sub> control strategy. We calculate that to demonstrate attainment of the proposed standard range would require 88 to 91% reductions in NO<sub>x</sub> emissions. This preliminary analysis means that we need to essentially transition out of fossil fuel combustion and move toward zero-emission technologies.

### **Attainment Dates**

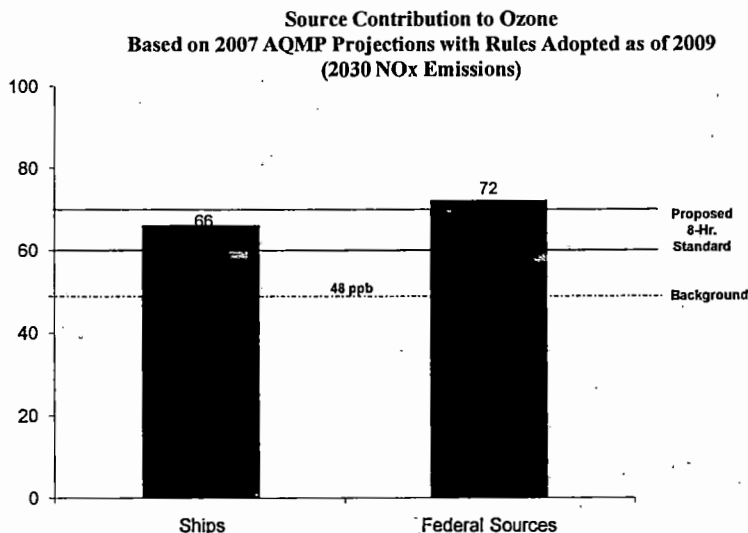
The traditional approach to set the attainment date for ozone based on air quality classification may not be workable for areas such as SCAB when the standard is revised. As currently envisioned, the attainment date allowable for SCAB under the federal Clean Air Act is 2031, which may not provide adequate time for transformative measures (e.g., electrification of goods movement and transportation systems) to be planned and implemented. We request that U.S. EPA address this pending issue.

### **Federal Fair Share Emissions Reductions**

If there is one thing that is absolutely clear, it is that the SCAQMD cannot demonstrate attainment with the proposed ozone standard range without fair share reductions in federal

source emissions. These include emissions reductions from ships, railroads, aircraft, and 49 state heavy-duty trucks. These reductions must be enforceable commitments.

The chart below shows the contribution from various federal NOx source categories to projected ozone 8-hour design values. The estimates provided are based on the 2007 AQMP modeled projections and include all rules adopted as of 2009.



The ozone concentrations are those predicted if the only source of NOx emissions in the basin were the specific source category noted on the x-axis. For example, eliminating all emissions other than for ships would yield an 8-hour design value of 66 ppb. Including all federal sources, which in addition to ships include railroads, aircraft, and 49 state heavy-duty trucks, gives an estimate of 72 ppb – a level that is not in attainment with the proposed standards range. Therefore, even if emissions from all non-federal sources were entirely eliminated, SCAQMD could not attain even the upper end of the proposed standard.

Clearly, a fair share reduction in emissions is required from all sources to demonstrate attainment with the proposed primary standards. As a result, it is necessary to revisit U.S. EPA's current policy of not accepting federal assignment in the SIP.

### **Research, Development and Deployment of Zero Emitting Technologies**

The path to attain the proposed standards is steep and requires the near elimination of precursor emissions from combustion sources in the SCAB. This necessitates substantial support for research, development, and deployment to foster the move toward zero emission technologies, including electrification and renewable energy sources. This would also produce co-benefits regarding greenhouse gas emissions and air toxics. We urge the Administrator to champion the use of federal transportation funds as a source of support for such development and deployment

of zero and near-zero emission technologies.

### Integrated SIP Planning

As required by the federal Clean Air Act, current planning and development of SIPs focuses on one air quality standard at a time. This is clearly inefficient, and control plans to meet a particular pollutant have significant impacts on the levels of other pollutants. Controlling NO<sub>x</sub> emissions, for example, has implications for air quality standards pertaining to nitrogen dioxide, ozone, and fine particulates as well as potentially reducing greenhouse gases and toxic air pollutants.

The table below shows the schedule for SIP development in the next five years for current and for proposed standards. As can be seen, such a piecemeal approach also increases uncertainty in the regulated community in that requirements for emissions controls from particular sources may change when moving from one pollutant to the next in the SIP process. This makes it harder for businesses to plan for future requirements related to complying with air quality regulations and may also result in stranded investment in pollution control.

**Estimated SIP Due Dates for Current and Proposed Standards**

Standard	Estimated SIP Due Date	Comment
PM <sub>2.5</sub> 24-Hour Standard	2012	
Proposed Ozone Standard Revision	2013	Based on attainment designations August, 2011
Proposed Sulfur Dioxide 1-Hour Standard	Winter 2014	Based on 2010 standard revision
Potential PM <sub>2.5</sub> Annual Standard Revision	2015	Based on standard revised April, 2011
Nitrogen Dioxide 1-Hour Standard	2017	Based on attainment re-designations January 2016

We strongly encourage the Administrator to adopt a framework where an integration of plans for SIPs can be accomplished.

While the challenges ahead are substantial, the SCAQMD staff stands ready to work with U.S. EPA to develop and to implement new, clean technologies that will be required to achieve healthful air quality in our region.

Sincerely,



Barry R. Wallerstein, D.Env.  
Executive Officer

BOARD MEETING DATE: March 6, 2015

AGENDA NO. 28

**PROPOSAL:** Proposed Amended Rule 1420.1 – Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities

**SYNOPSIS:** At the January 2014 Board meeting, staff reported on two studies to address the technical, economic, and physical feasibility of achieving a total facility mass lead emission rate of 0.003 lb/hour from all lead point sources (stack emissions) at large lead-acid battery recycling facilities. Based on elevated levels of lead found in surface dust and soil samples collected and analyzed by the Department of Toxic Substances Control, the Board directed staff to amend Rule 1420.1 – Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities to lower the lead point source emission rate and other possible revisions to reduce lead exposure to the surrounding communities. SCAQMD staff is proposing to lower the point source emission rate limit, lower ambient lead concentration limits, increase the frequency of lead and arsenic monitoring to daily, and other provisions that will further reduce lead exposure and the accumulation of lead in the soil and surface dust.

**COMMITTEE:** Stationary Source, November 21, 2014, Reviewed

**RECOMMENDED ACTIONS:**

Adopt the attached resolution:

1. Certifying the Final Subsequent Environmental Assessment for Proposed Amended Rule 1420.1 – Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities; and
2. Amending Rule 1420.1 – Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities

Barry R. Wallerstein, D.Env.  
Executive Officer



## **Background**

Rule 1420.1 – Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities was adopted on November 5, 2010 and amended on January 10 and March 7, 2014, and applies to large lead-acid battery recycling facilities. There are currently two large lead-acid battery recycling facilities, Exide Technologies located in Vernon, and Quemetco Inc. located in the City of Industry. The rule includes ambient lead and arsenic concentration limits, point source limits for lead, arsenic, benzene, and 1,3-butadiene, and a series of housekeeping provisions.

At the January 10, 2014 Board meeting, SCAQMD staff presented findings regarding lowering the lead point source emission rate and information regarding elevated levels of lead found in surface dust and soil samples near the Exide facility that were collected and analyzed by the California Department of Toxic Substances Control. Based on this information, the Board directed staff to amend Rule 1420.1 to lower the lead point source emission rate and make other possible revisions to reduce lead exposure to the surrounding communities.

At the January 9, 2015 Board meeting, staff presented the approach for PAR 1420.1 to lower the ambient lead concentration limit to  $0.110 \mu\text{g}/\text{m}^3$ , effective January 1, 2016, and then further reduce it to  $0.100 \mu\text{g}/\text{m}^3$  effective January 1, 2017. The Board agreed with staff's approach to lower the ambient lead concentration limit, and also asked that staff return with a proposal for possible adoption to further lower the overall stack emission rate to 0.003 lb/hr in six months.

## **Proposal**

Proposed Amended Rule (PAR) 1420.1 proposes to lower the lead ambient air concentration limit from  $0.150 \mu\text{g}/\text{m}^3$  to  $0.110 \mu\text{g}/\text{m}^3$  averaged over any 30 consecutive days effective January 1, 2016 and then further reduce it to  $0.100 \mu\text{g}/\text{m}^3$  effective January 1, 2017. Under Rule 1420.1, affected facilities are required to have a minimum of four monitors that are strategically located to capture the expected maximum ground level concentration. These ambient monitors capture all emissions – point source and fugitive. PAR 1420.1 will increase the monitoring frequency from one in three days to daily, ensuring lead emissions are well controlled on a continuous basis, 24 hours a day. Staff believes that lowering the ambient lead concentration limit will require both facilities to control all lead sources and provides the greatest protection to the community.

Staff is also proposing to lower the lead point source emission limit from 0.045 lb/hr to 0.023 lb/hr. PAR 1420.1 also proposes to include housekeeping measures, add reporting requirements, and reduce the threshold for compliance plans and process curtailments consistent with the proposed ambient lead concentration and lead emission rate limits.

## **Public Process**

PAR 1420.1 was developed through a public process. A PAR 1420.1 Working Group was composed of a variety of stakeholders including representatives and consultants for the regulated industry; the California Department of Toxic Substances Control and other agency representatives; environmental and community representatives; and other interested parties. The Working Group met four times, twice in October, once in November and once in February. In addition, two Public Workshops were held, one on October 30, 2014 and one on November 19, 2014. The November Public Workshop was held in East Los Angeles.

## **Key Outstanding Issues**

### *Lead Point Source Emission Rate Limit*

The SCAQMD staff has received a comment from Quemetco that the proposed amended rule should lower the lead point source emission rate limit to 0.003 pound per hour. Quemetco currently meets the 0.003 pounds per hour, while Exide's overall stack emission rate is about an order of magnitude higher. Exide asserts that attaining 0.003 pounds per hour for all lead point sources is infeasible for their facility and it must be given a chance to implement the SCAQMD-approved Risk Reduction Plan Projects without reference to a mass emissions rate. The comparison between both facilities' ambient lead concentration data averaged over 30 days, and averaged across all monitors at each facility in 2013 are similar. As the lead point sources have become more and more controlled, fugitive emissions have become the more dominating factor on the ambient lead concentrations.

PAR 1420.1 incorporates a holistic regulatory approach that addresses point and fugitive lead emissions. PAR 1420.1 lowers the overall point source lead limit by 50 percent to 0.023 pounds per hour and lowers the ambient concentration limit from 0.150  $\mu\text{g}/\text{m}^3$  to 0.100  $\mu\text{g}/\text{m}^3$ . Since the adoption of Rule 1420.1 in 2010 the ambient lead concentration limit will have been reduced over 90 percent, from 1.50  $\mu\text{g}/\text{m}^3$  to 0.100  $\mu\text{g}/\text{m}^3$ . The adoption resolution includes a commitment for staff to return to the Board in six months with a proposal to lower the overall point source lead emission limit to 0.003 lb/hour and other options.

## **California Environmental Quality Act (CEQA)**

Pursuant to California Environmental Quality Act (CEQA) Guidelines §15162 and §15252 and SCAQMD Rule 110, the SCAQMD prepared a Draft Subsequent Environmental Assessment (SEA) for proposed amended Rule 1420.1. The Draft SEA included a project description and analysis of potential adverse environmental impacts that could be generated from the proposed project. The environmental analysis in the Draft SEA concluded that PAR 1420.1 would not generate any significant adverse impacts. Because the project will not result in significant adverse impacts, mitigation measures were not required and, thus, not made a condition of the approval of this project. Findings were not required pursuant to the provisions of CEQA Guidelines §

15091 and, thus, not adopted for this project. The Draft SEA was released for a 30-day public review and comment period beginning on January 27, 2015 and ending on February 25, 2015. One comment letter was received from the public relative to the environmental analysis in the Draft SEA and a response is included in the Final SEA.

Subsequent to the public release of the Draft SEA, minor additions and modifications were made to the SEA for clarification purposes. However, none of the additions or modifications alters any conclusions nor provides new information of significance relative to the Draft document. As a result, these minor revisions do not require recirculation of the document pursuant to CEQA Guidelines §15073.5. Therefore, the document is now a Final SEA and is included as an attachment to this Board package.

### **Socioeconomic Analysis**

The proposed amendments to Rule 1420.1 would affect two large lead-acid battery recycling facilities that can process more than 50,000 tons of lead annually. The total compliance cost from the proposed amendments is estimated to be \$0.7 million annually, of which \$0.6 million is incurred by Exide. An annual compliance cost of this magnitude, when compared to the relative total value of the local economy (about \$1 Trillion), is expected to have no significant regional economic impacts. The socioeconomic assessment is part of the staff report.

### **AQMP and Legal Mandates**

Pursuant to Health & Safety Code Section 40460 (a), the SCAQMD is required to adopt an Air Quality Management Plan (AQMP) demonstrating compliance with all federal regulations and standards. The SCAQMD is required to adopt rules and regulations that carry out the objectives of the AQMP. PAR 1420.1 is not a control measure of the 2012 AQMP but is needed to reduce exposure and associated health risk impacts from lead, arsenic and other toxic emissions from large lead-acid battery recycling facilities. However, PAR 1420.1 will be submitted for inclusion into the State Implementation Plan as a contingency measure to become federally enforceable upon a determination by the U.S. Environmental Protection Agency that all or part of the District has failed to attain the National Ambient Air Quality Standard for Lead by the time required by the federal Clean Air Act.

### **Implementation and Resource Impact**

Implementation of Rule 1420.1 has taken a number of resources to ensure compliance. Existing SCAQMD resources will be used to implement PAR 1420.1.

### **Attachments**

- A. Summary of Proposal
- B. Key Issues and Responses
- C. Rule Development Process
- D. Key Contacts List
- E. Resolution
- F. Proposed Amended Rule 1420.1 Rule Language
- G. Proposed Amended Rule 1420.1 Staff Report
- H. Final Subsequent Environmental Analysis

**ATTACHMENT A**  
**SUMMARY OF PROPOSAL**

Proposed Amended Rule 1420.1 – Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities

Ambient Concentration of Lead Limit

- Effective January 1, 2016, lower the lead ambient air concentration limit from 0.150  $\mu\text{g}/\text{m}^3$  to 0.110  $\mu\text{g}/\text{m}^3$  averaged over any 30 consecutive days
- Effective January 1, 2017, lower the lead ambient air concentration from of 0.110  $\mu\text{g}/\text{m}^3$  to 0.100  $\mu\text{g}/\text{m}^3$  averaged over any 30 consecutive days

Lead Point Source Emissions Controls

- Effective January 1, 2016, lower the total facility mass lead emission rate from all point sources from 0.045 pounds of lead per hour to 0.023 pounds of lead per hour

Monitoring

- Increase the frequency of lead and arsenic monitoring from once every 3 days to daily

Compliance Plan Requirements

- Trigger for compliance plan is consistent with compliance dates of ambient lead concentration limits

Housekeeping Requirements

- Require that all trash and debris containing lead or arsenic be contained in covered containers, free of leaks, that are opened only when adding or removing trash or debris
- Require signs limiting the plant-wide speed of vehicles to five miles per hour

Source Testing

- Reduce the lead point source emission rate that triggers annual source testing rather than biannual source testing by 50 percent, consistent with the lower total facility mass lead emission rate
- Clarify that changes to source test methods only need approval from Executive Officer, in addition to the California Air Resources Board or the U.S. EPA, as applicable.
- Require the submittal of source test reports in 90 days

Reporting

- Require reporting within 72 hours if any daily ambient lead sample is greater than 0.300  $\mu\text{g}/\text{m}^3$
- Require notification if a total enclosure is breached
- Clarify that unplanned shutdowns require notification regardless of potential

emissions

- Require caution signs with contact information around the facility to give the facility the opportunity to be notified of any pavement or soil work that may be occurring outside of the facility

Curtailment Requirements

- Revise curtailment provisions to be consistent with proposed changes to the ambient lead concentration limits and overall lead point source limit

**ATTACHMENT B**  
**KEY ISSUES AND RESPONSES**

Proposed Amended Rule (PAR) 1420.1 – Emissions Standards for Lead and other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities

- Lead Point Source Emission Rate Limit: The SCAQMD staff has received a comment from Quemetco that the proposed amended rule should lower the lead point source emission rate limit from 0.045 pound per hour to 0.003 pound per hour. Quemetco is currently meeting the 0.003 pound per hour limit for lead, while Exide only meets the proposed 0.023 pound per hour limit and may not meet the 0.003 pound per hour limit for lead once new equipment is installed under a risk reduction plan.
  - PAR 1420.1 incorporates a holistic regulatory approach. The proposed rule lowers the overall point source lead limit 50 percent to 0.023 pounds per hour and lowers the ambient concentration limit from 0.150  $\mu\text{g}/\text{m}^3$  to 0.100  $\mu\text{g}/\text{m}^3$ . Since the adoption of Rule 1420.1 in 2010 the ambient lead concentration limit will have been reduced over 90 percent, from 1.5  $\mu\text{g}/\text{m}^3$  to 0.100  $\mu\text{g}/\text{m}^3$ .
  - Both facilities' ambient lead concentration data averaged over 30 days, and averaged across all monitors at each facility were similar in 2013.
  - As the lead point sources have become more and more controlled, fugitive emissions have become the more dominating factor on the ambient lead concentrations.
  - Exide is currently installing air pollution control equipment to reduce arsenic, benzene and 1,3 butadiene emissions. Concurrent lead emission reductions are expected.
  - Staff will return to the Board within six months with a proposal for possible adoption to lower the overall point source lead emission limit to 0.003 lb/hour and other options.

**ATTACHMENT C**  
**RULE DEVELOPMENT PROCESS**

**Proposed Amended Rule 1420.1 – Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities**



**Six (6) months spent in rule development.**  
**Four (4) Working Group Meetings.**

**ATTACHMENT D**  
**KEY CONTACTS LIST**

California Communities Against Toxics  
Communities for a Better Environment  
Department of Toxic Substances Control  
Dolores Mejia (Exide Community Member)  
Duncan McKee (Quemetco Community Member)  
E4 Strategic Solutions, Inc.  
Environ International Corporation  
Envitech, Inc  
Exide Technologies  
Geosyntec Consultants  
JE Compliance Services, Inc.  
Kleinfelder  
Leonard Grossberg (Exide Community Member)  
Natural Resources Defense Council  
Quemetco Incorporated  
Teresa Marquez (Exide Community Member)  
Thomas Lohff (Quemetco Community Member)  
United Steelworkers Local 675



## ATTACHMENT E

RESOLUTION NO. 14-\_\_\_\_\_

**A Resolution of the Governing Board of the South Coast Air Quality Management District (SCAQMD) certifying the Final Subsequent Environmental Assessment (SEA) for Proposed Amended Rule 1420.1 – Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities.**

**A Resolution of the SCAQMD Governing Board Adopting Proposed Amended Rule (PAR) 1420.1 – Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities.**

**WHEREAS**, the SCAQMD Governing Board has determined with certainty that PAR 1420.1 is a “project” pursuant to the California Environmental Quality Act (CEQA); and

**WHEREAS**, the SCAQMD staff has prepared a Draft Subsequent Environmental Assessment (SEA) pursuant to its certified regulatory program and CEQA Guidelines §15162 and §15251, setting forth the potential environmental consequences of PAR 1420.1; and

**WHEREAS**, the Draft SEA determined the proposed project would result in no significant adverse environmental impacts; and

**WHEREAS**, the Draft SEA was circulated for 30-day public review and comment period, and the Draft SEA has been revised such that it is now a Final SEA; and

**WHEREAS**, it is necessary that the adequacy of the Final SEA including responses to comments be determined by the SCAQMD Governing Board prior to its certification; and

**WHEREAS**, the Final SEA reflects the independent judgment of the SCAQMD; and

**WHEREAS**, the Governing Board prior to voting on PAR 1420.1 – Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities, has reviewed and considered the Final SEA; and

**WHEREAS**, a Mitigation Monitoring Plan pursuant to Public Resources Code §21081.6, has not been prepared since no mitigation measures are necessary; and

**WHEREAS**, the SCAQMD Governing Board finds and determines, taking into consideration the factors in §(d)(4)(D) of the Governing Board Procedures, that the modifications which have been made to PAR 1420.1 since notice of public hearing was published do not significantly change the meaning of the proposed project within the meaning of Health and Safety Code §40726 and would not constitute significant new information requiring recirculation of the Draft SEA pursuant to CEQA Guidelines §15073.5; and

**WHEREAS**, lead has been identified as a toxic air contaminant by the Office of Environmental Health Hazard Assessment (OEHHA); and

**WHEREAS**, in December 2013 the California Department of Toxic Substances Control provided the SCAQMD staff letters explaining that elevated levels of lead were found in surface dust and soil samples near a large lead-acid battery recycling facility located in the District; and

**WHEREAS**, the SCAQMD Governing Board directed staff to begin rulemaking to consider lowering the lead point source emission rate and possibly other revisions to reduce the further accumulation of lead dust to the surrounding communities; and

**WHEREAS**, the SCAQMD staff conducted two public workshops regarding PAR 1420.1 on October 29, 2014 and November 19, 2014; and

**WHEREAS**, California Health and Safety Code §40727 requires that prior to adopting, amending or repealing a rule or regulation, the SCAQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report; and

**WHEREAS**, PAR 1420.1 is needed to further protect public health by reducing lead emissions from large lead-acid battery recycling facilities. For a toxic air contaminant, such as lead, for which there is no level of exposure that can yet be identified with confidence as clearly not being associated with some risk of deleterious health effects, the intent of PAR 1420.1 is to reduce emissions to the lowest level achievable through the most effective feasible control method. Recent testing of surface dust and soil by the California Department of Toxic Substances Control in 2013 near a large lead-acid battery recycling facility located in the District showed elevated lead levels. Such levels pose a health risk to

people that live and work in the surrounding community when lead is re-entrained into the ambient air. The proposed amended rule establishes a lower ambient lead concentration limit that will ensure that lead emissions from point and fugitive sources are well controlled; and

**WHEREAS**, the SCAQMD Governing Board obtains its authority to adopt, amend or repeal rules and regulations from sections 39002, 40000, 40001, 40440, 40441, 40702, 40725 through 40728, 41508, 41700, and 41706 of the Health and Safety Code; and

**WHEREAS**, the SCAQMD Governing Board has determined that PAR 1420.1 is written and displayed so that the meaning can be easily understood by persons directly affected by it. To ensure clarity in the proposed amended rule language, four working group meetings were conducted with significant input received from working group members made up of the large lead-acid battery recycling facilities in the Basin, environmental organizations, other agencies, and the public at large; and

**WHEREAS**, the SCAQMD Governing Board has determined that PAR 1420.1 will be implementing, interpreting or making specific the provisions of the California Health and Safety Code Sections 40001 (rules to achieve and maintain ambient air quality standards), 41700 (nuisance), 41706(b) (emission standards for lead compounds from non-vehicular sources), Federal Clean Air Act Section 112 (Hazardous Air Pollutants), and CAA Section 116.

**WHEREAS**, the SCAQMD Governing Board has determined that PAR 1420.1 is in harmony with, and not in conflict with, or contradictory to, existing statutes, court decisions, or state or federal regulations; and

**WHEREAS**, the SCAQMD Governing Board has determined that PAR 1420.1 does not impose the same requirements as any existing state or federal regulations, and the proposed project is necessary and proper to execute the powers and duties granted to, and imposed upon, the SCAQMD; and

**WHEREAS**, PAR 1420.1 is not a control measure in the 2012 Air Quality Management Plan (AQMP) or the 2012 Lead State Implementation Plan and thus, was not ranked by cost-effectiveness relative to other AQMP control measures in the 2012 AQMP, and furthermore, pursuant to Health and Safety Code §40910, cost-effectiveness in terms of dollars per ton of pollutant reduced is only applicable to rules regulating ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide and does not apply to toxic air contaminants; and

**WHEREAS**, Health and Safety Code §40727.2 requires the SCAQMD to prepare a written analysis of existing federal air pollution control requirements applicable to the same source type being regulated whenever it adopts, or amends a rule, and that the SCAQMD's comparative analysis of PAR 1420.1 is included in the staff report; and

**WHEREAS**, the SCAQMD Governing Board has determined that the Socioeconomic Assessment of PAR 1420.1 is consistent with the March 17, 1989 and October 14, 1994 Governing Board Socioeconomic Resolutions for rule adoption; and

**WHEREAS**, the SCAQMD Governing Board has determined that PAR 1420.1 will result in increased costs to the large lead-acid battery recycling facilities, yet are considered to be reasonable, with a total annualized cost as specified in the Socioeconomic Assessment; and

**WHEREAS**, the SCAQMD Board has actively considered the Socioeconomic Assessment and has made a good faith effort to minimize such impacts; and

**WHEREAS**, the SCAQMD Governing Board has determined that the Socioeconomic Assessment is consistent with the provisions of the California Health and Safety Code Sections 40440.8, 40728.5, 40920.6; and

**WHEREAS**, the SCAQMD Governing Board specifies the director of PAR 1420.1 as the custodian of the documents or other materials which constitute the record of proceedings upon which the adoption of this proposed project is based, which are located at the South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, California; and

**WHEREAS**, a public hearing has been properly noticed in accordance with all provisions of Health and Safety Code §40725; and

**WHEREAS**, the SCAQMD Governing Board has held a public hearing in accordance with all provisions of law; and

**WHEREAS**, the proposed amendments to Rule 1420.1 will be submitted for inclusion into the State Implementation Plan as a contingency measure to become federally enforceable upon a determination by U.S. Environmental Protection Agency that all or part of the South Coast Air Basin has failed to attain the National Ambient Air Quality Standard for lead by the time required by the Clean Air Act; and

**NOW, THEREFORE BE IT RESOLVED**, that the SCAQMD Governing Board directs staff to return to the SCAQMD Governing Board within six months with a proposal to lower the overall point source lead emission limit to 0.003 lb/hour and other options; and

**BE IT FURTHER RESOLVED**, that the SCAQMD Governing Board hereby approves the responses to comments in the Final SEA and certifies, pursuant to the authority granted by law, that the Final SEA for PAR 1420.1 – Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities was prepared in compliance with the requirements of CEQA; and

**BE IT FURTHER RESOLVED**, that because no significant adverse environmental impacts were identified as a result of implementing PAR 1420.1, a Statement of Findings, a Statement of Overriding Considerations, and a Mitigation Monitoring Plan are not required; and

**BE IT FURTHER RESOLVED**, that the SCAQMD Governing Board does hereby adopt, pursuant to the authority granted by law, PAR 1420.1 as set forth in Attachment F.

DATE: \_\_\_\_\_

\_\_\_\_\_  
CLERK OF THE BOARDS

## ATTACHMENT F

(Adopted November 5, 2010)(Amended January 10, 2014)  
(Amended March 7, 2014)  
(PAR 1420.1 February 2015)

**PROPOSED**  
**AMENDED RULE**  
**1420.1.**

**EMISSION STANDARDS FOR LEAD AND OTHER  
TOXIC AIR CONTAMINANTS FROM LARGE LEAD-  
ACID BATTERY RECYCLING FACILITIES**

(a) Purpose

- (1) The purpose of this rule is to protect public health by reducing exposure and emissions of lead from large lead-acid battery recycling facilities, and to help ensure attainment and maintenance of the National Ambient Air Quality Standard for Lead. The purpose of this rule is to also protect public health by reducing arsenic, benzene, and 1,3-butadiene exposure and emissions from these facilities.

(b) Applicability

- (1) This rule applies to all persons who own or operate a lead-acid battery recycling facility that has processed more than 50,000 tons of lead a year in any one of the five calendar years prior to November 5, 2010, or annually thereafter, hereinafter a large lead-acid battery recycling facility. Applicability shall be based on facility lead processing records required under subdivision (m) of this rule, and Rule 1420 – Emissions Standards for Lead. Compliance with this rule shall be in addition to other applicable rules such as Rules 1407 and 1420.

(c) Definitions

For the purposes of this rule, the following definitions shall apply:

- (1) AGGLOMERATING FURNACE means a furnace used to melt flue dust that is collected from an emission control device, such as a baghouse, into a solid mass.
- (2) AMBIENT AIR for purposes of this rule means outdoor air.
- (3) ARSENIC means the oxides and other compounds of the element arsenic included in particulate matter, vapors, and aerosols.
- (4) BATTERY BREAKING AREA means the plant location at which lead-acid batteries are broken, crushed, or disassembled and separated into components.
- (5) BENZENE means an organic compound with chemical formula C<sub>6</sub>H<sub>6</sub> and

Chemical Abstract Service number 71-43-2.

- (6) 1,3-BUTADIENE means an organic compound with chemical formula  $C_4H_6$  and Chemical Abstract Service number 106-99-0.
- (7) DRYER means a chamber that is heated and that is used to remove moisture from lead-bearing materials before they are charged to a smelting furnace.
- (8) DRYER TRANSITION PIECE means the junction between a dryer and the charge hopper or conveyor, or the junction between the dryer and the smelting furnace feed chute or hopper located at the ends of the dryer.
- (9) DUCT SECTION means a length of duct including angles and bends which is contiguous between two or more process devices (e.g., between a furnace and heat exchanger; baghouse and scrubber; scrubber and stack; etc.).
- (10) EMISSION COLLECTION SYSTEM means any equipment installed for the purpose of directing, taking in, confining, and conveying an air contaminant, and which at minimum conforms to design and operation specifications given in the most current edition of *Industrial Ventilation, Guidelines and Recommended Practices*, published by the American Conference of Government and Industrial Hygienists, at the time a complete permit application is filed with the District.
- (11) EMISSION CONTROL DEVICE means any equipment installed in the ventilation system of a point source or emission collection system for the purposes of collecting and reducing emissions of arsenic, benzene, lead, 1,3-butadiene, or any other toxic air contaminant.
- (12) FUGITIVE LEAD-DUST means any solid particulate matter containing lead that is in contact with ambient air and has the potential to become airborne.
- (13) FURNACE AND REFINING/CASTING AREA means any area of a large lead-acid battery recycling facility in which:
  - (a) Smelting furnaces or agglomerating furnaces are located; or
  - (b) Refining operations occur; or
  - (c) Casting operations occur.
- (14) LEAD-ACID BATTERY RECYCLING FACILITY means any facility, operation, or process in which lead-acid batteries are disassembled and recycled into elemental lead or lead alloys through smelting.
- (15) LEAD means elemental lead, alloys containing elemental lead, or lead compounds, calculated as elemental lead.
- (16) LEEWARD WALL means the furthest exterior wall of a total enclosure that is opposite the windward wall.

- (17) MAINTENANCE ACTIVITY means any of the following activities conducted outside of a total enclosure that generates or has the potential to generate fugitive lead-dust:
- (a) building construction, renovation, or demolition;
  - (b) replacement or repair of refractory, filter bags, or any internal or external part of equipment used to process, handle, or control lead-containing materials;
  - (c) replacement of any duct section used to convey lead-containing exhaust;
  - (d) metal cutting or welding that penetrates the metal structure of any equipment, and its associated components, used to process lead-containing material, such that lead dust within the internal structure or its components can become fugitive lead-dust; ~~or~~
  - (e) resurfacing, grading, repair, or removal of ground, pavement, concrete, or asphalt; ~~or~~
  - (f) soil disturbances, including but not limited to, soil sampling, soil remediation, or activities where soil is moved, removed, and/or stored.
- (18) MATERIALS STORAGE AND HANDLING AREA means any area of a large lead-acid battery recycling facility in which lead-containing materials including, but not limited to, broken battery components, reverberatory furnace slag, flue dust, and dross, are stored or handled between process steps. Areas may include, but are not limited to, locations in which materials are stored in piles, bins, or tubs, and areas in which material is prepared for charging to a smelting furnace.
- (19) MEASURABLE PRECIPITATION means any on-site measured rain amount ~~of~~ greater than 0.01 inches in any complete 24-hour calendar day (i.e., midnight to midnight).
- (20) PARTIAL ENCLOSURE for purposes of this rule means a structure comprised of walls or partitions on at least three sides or three-quarters of the perimeter that surrounds areas where maintenance activity is conducted, in order to prevent the generation of fugitive lead-dust.
- (21) POINT SOURCE means any process, equipment, or total enclosure used in a large lead-acid battery recycling facility, including, but not limited to, agglomerating furnaces, dryers, smelting furnaces and refining kettles, whose emissions pass through a stack or vent designed to direct or control



the exhaust flow prior to release into the ambient air.

- (22) PROCESS means using lead or lead-containing materials in any operation including, but not limited to, the charging of lead-containing materials to smelting furnaces, lead refining and casting operations, and lead-acid battery breaking.
- (23) RENOVATION for purposes of this rule means the altering of a building or permanent structure, or the removal of one or more of its components that generates fugitive lead-dust-emissions.
- (24) SENSITIVE RECEPTOR means, for the purposes of this rule, any residence including private homes, condominiums, apartments, and living quarters; education resources such as preschools and kindergarten through grade twelve (k-12) schools; daycare centers; and health care facilities such as hospitals or retirement and nursing homes. A sensitive receptor includes long term care hospitals, hospices, prisons, and dormitories or similar live-in housing.
- (25) SLAG means the inorganic material by-product discharged, in molten state, from a lead smelting furnace that has a lower specific gravity than lead metal and contains lead compounds. This shall include, but is not limited to, lead sulfate, lead sulfide, lead oxides, and lead carbonate consisting of other constituents charged to a smelting furnace which are fused together during the pyrometallurgical process.
- (26) SMELTING means the chemical reduction of lead compounds to elemental lead or lead alloys through processing in high temperatures greater than 980° C.
- (27) SMELTING FURNACE means any furnace where smelting takes place including, but not limited to, blast furnaces, reverberatory furnaces, rotary furnaces, and electric furnaces.
- (28) STATIC DIFFERENTIAL FURNACE PRESSURE means the difference between the absolute internal pressure of the smelting furnace ( $P_f$ , in inches water column) and the absolute atmospheric pressure in the immediate vicinity outside the smelting furnace ( $P_a$ , in inches water column) and is calculated as follows:  $P_f - P_a$ .
- (29) TOTAL ENCLOSURE means a permanent containment building/structure, completely enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-off), with limited openings to allow access and egress for people and vehicles, that is free of cracks, gaps,

corrosion, or other deterioration that could cause or result in fugitive lead-dust.

- (30) TOXIC AIR CONTAMINANT is an air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a present or potential hazard to human health.
- (31) WINDWARD WALL means the exterior wall of a total enclosure which is most impacted by the wind in its most prevailing direction determined by a wind rose using data required under paragraph (j)(5) of this rule, or other data approved by the Executive Officer.

(d) General Requirements

~~The owner or operator of a large lead-acid battery recycling facility shall be subject to the following requirements:~~

(1) Ambient Air Concentration of Lead

~~Prior to January 1, 2012, emissions~~ The owner or operator of a large lead-acid battery recycling facility shall not discharge emissions shall not be discharged—into the atmosphere which contribute to ambient air concentrations of lead that exceed the following:

<u>Effective Date</u>	<u>Ambient Air Concentration of Lead, micrograms per cubic meter (µg/m<sup>3</sup>), averaged over 30 consecutive days</u>
<u>Prior to January 1, 2016</u>	<u>0.150 µg/m<sup>3</sup></u>
<u>January 1, 2016 to December 31, 2016</u>	<u>0.110 µg/m<sup>3</sup></u>
<u>On and after January 1, 2017</u>	<u>0.100 µg/m<sup>3</sup></u>

~~1.50 micrograms per cubic meter (µg/m<sup>3</sup>) pursuant to District Rule 1420.~~ An exceedance of the ambient air concentrations of lead specified in the above table shall occur if it is measured by any monitor installed pursuant to subdivision (j) or at any District-installed monitor.

- (2) ~~On and after January 1, 2012, emissions shall not be discharged into the atmosphere which contribute to ambient air concentrations of lead that exceed 0.150 µg/m<sup>3</sup> averaged over any 30 consecutive days. The ambient air concentrations of lead shall be determined by monitors pursuant to subdivision (j) or at any District installed monitor.~~
- (32) ~~No later than July 1, 2011, install, maintain~~ The owner or operator of a large lead-acid battery recycling facility shall maintain, and operate total

enclosures pursuant to subdivision (e) and lead point source emission control devices pursuant to paragraphs (f)(1) and (f)(6) through (f)(8). ~~The owner or operator of a large lead-acid battery recycling facility shall comply with both subparagraphs (d)(3)(A) and (d)(3)(B):~~

- ~~(A) Submit complete permit applications for all construction and necessary equipment within 30 days of November 5, 2010.~~
- ~~(B) Complete all construction within 180 days of receiving Permit to Construct approvals from the Executive Officer, or by July 1, 2011, whichever is earlier.~~
- ~~(C) The Executive Officer may approve a request for an extension of the compliance deadline date if the facility can demonstrate that it timely filed all complete permit applications and is unable to meet the deadline due to reasons beyond the facility's control. The request shall be submitted to the Executive Officer no less than 30 days before the compliance deadline date.~~

~~(43) On and after July 1, 2011 The owner or operator of a large lead-acid battery recycling facility shall submit a Compliance Plan pursuant to subdivision (g) if emissions are discharged into the atmosphere which contribute to ambient air concentrations of lead or arsenic that exceed the ambient concentrations in paragraph (g)(1). 0.120 ( $\mu\text{g}/\text{m}^3$ ) averaged over any 30 consecutive days determined by monitors pursuant to subdivision (j) or at any District-installed monitor.~~

- ~~(54) The owner or operator of a large lead-acid battery recycling facility shall:~~
- ~~(A) Within 30 days of January 10, 2014, submit a Compliance Plan Schedule to the Executive Officer for review and approval to ensure that the facility will comply with the January 1, 2015 total facility mass emissions limits for arsenic, benzene, and 1,3-butadiene point sources specified in paragraph (f)(2). The Compliance Plan Schedule shall be subject to plan fees specified in Rule 306 and include:
    - ~~(i) a list of all control measures to be implemented that includes a description of the control technology, the equipment that will be affected, the affected pollutants, the anticipated reductions, and the dates the measures will be implemented; and~~
    - ~~(ii) a schedule that identifies dates for completion of engineering~~~~

design(s), equipment procurement, construction, demolition (if any), equipment installation, and testing for each control measure described pursuant to clause (d)(4)(A)(i) ~~(d)(5)(A)(i)~~.

- (B) Submit complete permit applications for all equipment specified in the Compliance Plan Schedule that requires a District permit within 90 days of January 10, 2014.
- (C) Complete all construction within 180 days of receiving Permit to Construct approvals from the Executive Officer.
- (D) The owner or operator of a large lead-acid battery recycling facility shall not be subject to requirements of subparagraphs (d)(4)(A) through (d)(4)(C) ~~(d)(5)(A) through (d)(5)(C)~~ if the most recent District-approved source tests, conducted no earlier than January 1, 2011, show that the facility is meeting all of the emission limits specified in paragraph (f)(2).

(65) Ambient Air Concentration of Arsenic

~~On and after February 1, 2014, the~~ The owner or operator of a large lead-acid battery recycling facility shall not ~~allow discharge emissions to be discharged~~ into the atmosphere which contribute to an ambient air concentration of arsenic that exceeds 10.0 nanograms per cubic meter (ng/m<sup>3</sup>) averaged over a 24-hour time period as determined by monitors pursuant to subdivision (j) or by any District-installed monitor. An exceedance of 10.0 ng/m<sup>3</sup> averaged over a 24-hour period shall be based on the average of the analysis of two sample results on the same filter. A second analysis is required if the first sample exceeds 10.0 ng/m<sup>3</sup>.

- (76) If the ambient air concentration of arsenic is determined to exceed 10.0 ng/m<sup>3</sup> averaged over a 24-hour time period as calculated pursuant to paragraph (d)(65), then the owner or operator shall notify the Executive Officer in writing within 72 hours of when the facility knew or should have known it exceeded the ambient air arsenic concentration of 10.0 ng/m<sup>3</sup> averaged over a 24-hour time period.

- ~~(A) Notify the Executive Officer in writing within 72 hours of when the facility knew or should have known it exceeded the ambient air arsenic concentration of 10.0 ng/m<sup>3</sup> averaged over a 24-hour time period; and~~
- (B) Comply with the monitoring and sampling requirements in paragraph

~~(j)(10).~~

(87) The owner or operator of a large lead-acid battery recycling facility shall fund and participate in a multi-metal continuous emissions monitoring system (CEMS) demonstration program to continuously monitor lead, arsenic, and other metals emitted from a stack within its facility for a period specified by the District. Participation and funding of the multi-metals CEMS demonstration program shall require the owner or operator to:

(A) Submit payment to the District for District personnel or its contractor to assemble, install, maintain, train, test, analyze, and decommission a multi-metals CEMS demonstration program not to exceed the following amounts and schedule:

(i) \$63,500 by April 1, 2014; and an additional

(ii) \$143,225 by September 1, 2014

(B) Provide continuous facility access to District personnel and its contractors to deliver, assemble, install, monitor, maintain, test, analyze, and decommission a multi-metals CEMS;

(C) Provide the necessary location and infrastructure for the multi-metals CEMS including:

(i) siting location with sufficient spacing, clearance, and structural support;

(ii) electric power circuits;

(iii) compressed air;

(iv) sampling port(s);

(v) access to wireless modem connection for data retrieval;

(vi) any necessary moving or lifting equipment and personnel to operate such equipment in order to install the system; and

(vii) day to day instrument and equipment operation.

(e) Total Enclosures

(1) Enclosure Areas

The owner or operator of a large lead-acid battery recycling facility shall enclose within a total enclosure the following areas in groups or individually:

(A) Battery breaking areas;

(B) Materials storage and handling areas, excluding areas where unbroken lead-acid batteries and finished lead products are stored;

- (C) Dryer and dryer areas including dryer transition pieces, charging hoppers, chutes, and skip hoists conveying any lead-containing material;
  - (D) Smelting furnaces and smelting furnace areas charging any lead-containing material;
  - (E) Agglomerating furnaces and agglomerating furnace areas charging any lead-containing material; and
  - (F) Refining and casting areas.
- (2) Total Enclosure Emissions Control
- The owner or operator of a large lead-acid battery recycling facility shall vent each total enclosure to an emission collection system that ducts the entire gas stream which may contain lead to a lead emission control device and the entire gas stream which may contain arsenic to an arsenic emission control device, respectively, pursuant to subdivision (f).
- (3) Total Enclosure Ventilation
- Ventilation of the total enclosure at any opening including, but not limited to, vents, windows, passages, doorways, bay doors, and roll-ups shall continuously be maintained at a negative pressure of at least 0.02 mm of Hg (0.011 inches H<sub>2</sub>O) measured pursuant to paragraph (e)(4).
- (4) Digital Differential Pressure Monitoring Systems
- The owner or operator of a large lead-acid battery recycling facility shall install, operate, and maintain a digital differential pressure monitoring system for each total enclosure as follows:
- (A) A minimum of one building digital differential pressure monitoring system shall be installed and maintained at each of the following three walls in each total enclosure having a total ground surface area of 10,000 square feet or more:
    - (i) The leeward wall;
    - (ii) The windward wall; and
    - (iii) An exterior wall that connects the leeward and windward wall at a location defined by the intersection of a perpendicular line between a point on the connecting wall and a point on its furthest opposite exterior wall, and intersecting within plus or minus ten ( $\pm 10$ ) meters of the midpoint of a straight line between the two other monitors specified in clauses (e)(4)(A)(i) and (e)(4)(A)(ii). The

midpoint monitor shall not be located on the same wall as either of the other two monitors described in clauses (e)(4)(A)(i) or (e)(4)(A)(ii).

- (B) A minimum of one building digital differential pressure monitoring system shall be installed and maintained at the leeward wall of each total enclosure that has a total ground surface area of less than 10,000 square feet.
  - (C) Digital differential pressure monitoring systems shall be certified by the manufacturer to be capable of measuring and displaying negative pressure in the range of 0.01 to 0.2 mm Hg (0.005 to 0.11 inches H<sub>2</sub>O) with a minimum increment of measurement of plus or minus 0.001 mm Hg (0.0005 inches H<sub>2</sub>O).
  - (D) Digital differential pressure monitoring systems shall be equipped with a continuous strip chart recorder or electronic recorder approved by the Executive Officer. If an electronic recorder is used, the recorder shall be capable of writing data on a medium that is secure and tamper-proof. The recorded data shall be readily accessible upon request by the Executive Officer. If software is required to access the recorded data that is not readily available to the Executive Officer, a copy of the software, and all subsequent revisions, shall be provided to the Executive Officer at no cost. If a device is required to retrieve and provide a copy of such recorded data, the device shall be maintained and operated at the facility.
  - (E) Digital differential pressure monitoring systems shall be calibrated in accordance with manufacturer's specifications at least once every 12 calendar months or more frequently if recommended by the manufacturer.
  - (F) Digital differential pressure monitoring systems shall be equipped with a backup, uninterruptible power supply to ensure continuous operation of the monitoring system during a power outage.
- (5) In-draft Velocity
- The in-draft velocity of the total enclosure shall be maintained at  $\geq 300$  feet per minute at any opening including, but not limited to, vents, windows, passages, doorways, bay doors, and roll-ups. In-draft velocities for each total enclosure shall be determined by placing an anemometer, or an equivalent device approved by the Executive Officer, at the center of the

plane of any opening of the total enclosure.

(f) Point Source Emissions Controls

The owner or operator of a large lead-acid battery recycling facility shall vent emissions from each lead, arsenic, benzene, and 1,3-butadiene point source to a lead, arsenic, benzene, and 1,3-butadiene emission control device, respectively, that meets the requirements of this subdivision and is approved in writing by the Executive Officer.

(1) Lead Point Source Emission Controls

The owner or operator of a large lead-acid battery recycling facility shall:

- (A) Prior to January 1, 2016, Meet-meet a total facility mass lead emissions from all lead point sources not to exceed 0.045 pounds of lead per hour. On and after January 1, 2016, meet a total facility mass lead emissions from all lead point sources not to exceed 0.023 pounds of lead per hour. The maximum emission rate for any single lead point source shall not exceed 0.010 pounds of lead per hour. The total facility mass lead emission rate and maximum emission rates for any single lead point source shall be determined using the most recently approved source tests conducted on behalf of the facility or the District; and
- (B) Install a secondary lead emission control device that controls lead emissions from the exhaust of the primary lead emission control device used for a dryer. The secondary lead emission control device shall be fitted with dry filter media, and the secondary lead control device shall only be used to vent the primary lead emission control device used for the dryer. An alternative secondary lead control method that is equally or more effective for the control of lead emissions may be used if a complete application is submitted as part of the permit application required under paragraph (d)(32) and approved by the Executive Officer.

(2) Arsenic, Benzene and 1,3-Butadiene Point Source Emission Controls

The mass emissions from all arsenic, benzene, and 1,3-butadiene point sources at a large lead-acid battery recycling facility shall meet the following hourly emissions thresholds for the dates specified:

- (A) No later than 60 days after January 10, 2014, the total facility emission rate for a large lead-acid battery recycling facility from all



point sources shall not exceed 0.00285 pound of arsenic per hour.

- (B) No later than January 1, 2015, the total facility emission rate for a large lead-acid battery recycling facility from all point sources shall not exceed 0.00114 pound of arsenic per hour.
- (C) No later than January 1, 2015, the total emission rate for a large lead-acid battery recycling facility from all point sources excluding point sources from emission control devices on total enclosures shall not exceed the following:
  - (i) 0.0514 pound of benzene per hour; and
  - (ii) 0.00342 pound of 1,3-butadiene per hour.
- (D) The point source mass emission rates shall be determined based on the average of triplicate samples, using the most recent District-approved source tests conducted by the facility or the District, pursuant to subdivision (k).
- (E) For purposes of this rule, only point sources that have a source test result of greater than 1 part per billion shall be included in determining the total facility mass emission rates for benzene and 1,3-butadiene.

(3) Monitoring Device

~~No later than 90 days after January 10, 2014, the~~ The owner or operator of a large lead-acid battery recycling facility shall, for each smelting furnace, install, calibrate, operate and maintain a monitoring device that has been approved by the Executive Officer pursuant to paragraph (f)(4). The monitoring device shall measure and record the static differential furnace pressure in inches water column. Each smelting furnace shall be operated such that static differential furnace pressure, in inches of water column averaged over 30 minutes, is maintained at a value -0.02 or more negative. A reverberatory furnace may be operated at an alternative static differential furnace pressure if the owner or operator can demonstrate that it can achieve emission reductions that are equivalent to or better than those achieved when operating at a pressure of -0.02 or more negative. Demonstration shall be based on source test protocols and source tests conducted pursuant to the requirements of subdivision (k) and approved by the Executive Officer. The alternative static differential furnace pressure shall not exceed 0.4 inches water column and must be approved by the Executive Officer in the Continuous Furnace Pressure Monitoring Plan of paragraph (f)(4). For the

purposes of this requirement, the owner or operator shall ensure that the monitoring device:

- (A) Continuously measures the instantaneous static differential furnace pressure;
  - (B) Has a resolution of at least 0.01 inches water column;
  - (C) Has an increment of measurement of 0.01 inches water column;
  - (D) Has a range from -10 inches to +10 inches water column for the measuring device;
  - (E) Is equipped with ports to allow for periodic calibration in accordance with manufacturer's specifications;
  - (F) Is calibrated according to manufacturer's specifications at a frequency of not less than twice every calendar year;
  - (G) Is equipped with a continuous data acquisition system (DAS). The DAS shall record the data output from the monitoring device at a frequency of not less than once every sixty (60) seconds;
  - (H) Generates a data file from the computer system interfaced with each DAS each calendar day. The data file shall be saved in electronic ASCII character format, Microsoft Excel (xls orxlsx) format, PDF format, or other format as approved by the Executive Officer. The file shall contain a table of chronological date and time and the corresponding data output value from the monitoring device in inches of water column. The operator shall prepare a separate data file each day showing the 30-minute average pressure readings recorded by this device each calendar day; and
  - (I) Is maintained in accordance with manufacturer's specifications.
- (4) No later than 30 days after January 10, 2014, the owner or operator of a large lead-acid battery recycling facility shall submit to the Executive Officer for approval an application for a Continuous Furnace Pressure Monitoring (CFPM) Plan for the monitoring device required in paragraph (f)(3). The CFPM Plan shall contain the information identified in Appendix 3 of this rule and is subject to the fees specified in Rule 306.
- (5) The Executive Officer shall notify the owner or operator in writing whether the CFPM Plan is approved or disapproved. Determination of approval status shall be based on, at a minimum, submittal of information that satisfies the criteria set forth in paragraph (f)(4). If the CFPM Plan is disapproved, the owner or operator shall resubmit the CFPM Plan, subject to

plan fees specified in Rule 306, within 30 calendar days after notification of disapproval of the CFPM Plan. The resubmitted CFPM Plan shall include any information necessary to address deficiencies identified in the disapproval letter. It is a violation of the rule for a facility not to have an approved CFPM Plan after the second denial. If the resubmitted CFPM Plan is denied, the operator or owner may appeal the denial by the Executive Officer to the Hearing Board pursuant to Rule 216 – Appeals and Rule 221 - Plans.

- (6) For any emission control device that uses filter media other than a filter bag(s), including, but not limited to, HEPA and cartridge-type filters, the filter(s) used shall be rated by the manufacturer to achieve a minimum of 99.97% capture efficiency for 0.3 micron particles.
  - (7) For any emission control device that uses a filter bag(s), the filter bag(s) used shall be polytetrafluoroethylene membrane-type, or any other material that is equally or more effective for the control of lead emissions, and approved for use by the Executive Officer.
  - (8) Each emission collection system and emission control device subject to this subdivision shall, at minimum, be inspected, maintained, and operated in accordance with the manufacturer's specifications.
  - (9) The owner or operator of a large lead-acid battery recycling facility shall comply with the curtailment requirements in subdivision ~~(p)~~(o) if the total facility mass lead emissions from all lead point sources exceeds the limits specified in subparagraph (f)(1)(A), and/or the total facility emission rate from all arsenic point sources exceeds the limits specified in subparagraph (f)(2)(A) or (f)(2)(B).
- (g) Compliance Plan
- (1) ~~On and after July 1, 2011,~~ The owner or operator of a large lead-acid battery recycling facility shall submit a Compliance Plan if emissions are discharged into the atmosphere which contribute to ambient air concentrations of lead or arsenic that exceed the following:

<u>Air Contaminant</u>	<u>Effective Date</u>	<u>Ambient Air Concentration</u>
<u>Lead</u>	<u>Prior to January 1, 2016</u>	<u>0.120 <math>\mu\text{g}/\text{m}^3</math>, averaged over 30 consecutive days</u>
	<u>January 1, 2016 to December 31, 2106</u>	<u>0.110 <math>\mu\text{g}/\text{m}^3</math>, averaged over 30 consecutive days</u>
	<u>On and after January 1, 2017</u>	<u>0.100 <math>\mu\text{g}/\text{m}^3</math>, averaged over 30 consecutive days</u>
<u>Arsenic</u>	<u>On and after February 1, 2014</u>	<u>8 <math>\text{ng}/\text{m}^3</math>, averaged over a 24 hour time period as determined under paragraph (g)(8)</u>

~~averaged over any 30 consecutive days, or an ambient air concentration of arsenic that exceeds 8.0  $\text{ng}/\text{m}^3$  averaged over a 24-hour time period pursuant to paragraph (g)(7). The ambient air concentrations of lead and arsenic shall be, as determined by monitors pursuant to subdivision (j) or at any District-installed monitor, and shall:~~

- (12) The owner or operator of a large lead-acid battery recycling facility shall ~~Notify~~ notify the Executive Officer in writing within 72 hours of when the facility knew or should have known it exceeded an ambient air concentration of lead or arsenic specified in paragraph (g)(1) of 0.120  $\mu\text{g}/\text{m}^3$  averaged over any 30 consecutive days, or an ambient air concentration of arsenic of 8.0  $\text{ng}/\text{m}^3$  averaged over a 24-hour time period as determined in paragraph (g)(7). Notification shall only be required the first time the ambient air concentration of lead or arsenic exceeds the concentration limits in paragraph (g)(1) of 0.120  $\mu\text{g}/\text{m}^3$  or an ambient air concentration of arsenic of 8.0  $\text{ng}/\text{m}^3$  is exceeded for each monitor;
- (23) The owner or operator of a large lead-acid battery recycling facility shall ~~Submit~~ submit, within 30 calendar days of exceeding an ambient air concentration of lead or arsenic pursuant to paragraph (g)(1), of 0.120  $\mu\text{g}/\text{m}^3$  averaged over any 30 consecutive days, or exceeding an ambient air concentration of arsenic of 8.0  $\text{ng}/\text{m}^3$  averaged over a 24-hour time period as determined in paragraph (g)(7), a complete Compliance Plan to the Executive Officer for review and approval, subject to plan fees as specified in Rule 306. The Compliance Plan shall, at a minimum, include the

following:

- (A) A description of additional lead and/or arsenic emission reduction measures to achieve the ambient air concentration of lead as specified in paragraph (d)(1) of 0.150  $\mu\text{g}/\text{m}^3$  averaged over any 30 consecutive days, or the ambient air concentration of arsenic of 10.0  $\text{ng}/\text{m}^3$  averaged over a 24-hour time period, as required under paragraph ~~(d)(2) and (d)(6)~~ (d)(5), including, but not limited to, requirements for the following:
- (i) Housekeeping, inspection, and maintenance activities;
  - (ii) Additional total enclosures;
  - (iii) Modifications to lead and arsenic emission control devices;
  - (iv) Installation of multi-stage lead and arsenic emission control devices;
  - (v) Process changes including reduced throughput limits;
  - (vi) Conditional curtailments including, at a minimum, information specifying the curtailed processes, process amounts, and length of curtailment; and
  - (vii) Identification of lead and/or arsenic reduction measures to be implemented relative to increasing ranges of exceedance levels of the ambient air concentration limits.
- (B) The locations within the facility and method(s) of implementation for each lead and/or arsenic reduction measure of subparagraph ~~(g)(2)(A)(g)(3)(A)~~; and
- (C) An implementation schedule for each lead and/or arsenic emission reduction measure of subparagraph ~~(g)(2)(A)–(g)(3)(A)~~ to be implemented if lead and/or arsenic emissions discharged from the facility contribute to ambient air concentrations of lead that exceed the requirements in paragraph (d)(1) 0.150  $\mu\text{g}/\text{m}^3$  averaged over any 30 consecutive days, or ambient air concentrations of arsenic that exceed 10.0  $\text{ng}/\text{m}^3$  averaged over a 24-hour time period, measured at any monitor pursuant to subdivision (j) or at any District-installed monitor. The schedule shall also include a list of the lead and/or arsenic reduction measures of subparagraph (g)(2)(A) that can be implemented immediately, prior to plan approval.
- (34) The Executive Officer shall notify the owner or operator in writing whether the Compliance Plan is approved or disapproved. Determination of approval

status shall be based on, at a minimum, submittal of information that satisfies the criteria set forth in paragraph (g)(2), and whether the plan is likely to lead to avoiding future exceedances of the ambient air concentration levels set forth in paragraph (g)(1). If the Compliance Plan is disapproved, the owner or operator shall resubmit the Compliance Plan, subject to plan fees specified in Rule 306, within 30 calendar days after notification of disapproval of the Compliance Plan. The resubmitted Compliance Plan shall include any information necessary to address deficiencies identified in the disapproval letter. It is a violation of the rule for a facility not to have an approved Compliance Plan after the second denial. If the resubmitted Compliance Plan is denied, the operator or owner may appeal the denial by the Executive Officer to the Hearing Board under Rule 216 – Appeals and Rule 221 - Plans.

- (45) The owner or operator shall implement measures based on the schedule in the approved Compliance Plan if lead emissions discharged from the facility contribute to ambient air concentrations of lead to exceed the requirements in paragraph (d)(1) ~~0.150  $\mu\text{g}/\text{m}^3$  averaged over any 30 consecutive days,~~ or an ambient air concentration of arsenic of  $10.0 \text{ ng}/\text{m}^3$  averaged over a 24-hour time period as determined in paragraph ~~(d)(6)~~(d)(5), measured at any monitor pursuant to subdivision (j) or at any District-installed monitor.
- (56) The owner or operator may make a request to the Executive Officer to modify or update an approved Compliance Plan.
- (67) The owner or operator shall update the Compliance Plan 12 months from January 10, 2014 and annually thereafter, in order to update measures that have been implemented and to identify any new measures that can be implemented.
- (78) An exceedance of an ambient air concentration of arsenic of  $8.0 \text{ ng}/\text{m}^3$  averaged over a 24-hour period shall be based on the average of the analysis of two sample results on the same filter. A second analysis is required if the first sample exceeds  $8.0 \text{ ng}/\text{m}^3$ .

(h) Housekeeping Requirements

~~No later than 30 days after November 5, 2010, the~~ The owner or operator of a large lead-acid battery recycling facility shall control fugitive lead-dust by conducting all of the following housekeeping practices:

- (1) Clean by wet wash or a vacuum equipped with a filter(s) rated by the

manufacturer to achieve a 99.97% capture efficiency for 0.3 micron particles in a manner that does not generate fugitive lead-dust, the following areas at the specified frequencies, unless located within a total enclosure vented to a lead emission control device. Days of measurable precipitation in the following areas occurring within the specified timeframe of a required cleaning frequency may be counted as a cleaning:

- (A) Monthly cleanings of roof tops on structures  $\leq$  45 feet in height that house areas associated with the storage, handling or processing of lead-containing materials; and
  - (B) Quarterly cleanings, no more than 3 calendar months apart, of roof tops on structures  $>$  45 feet in height that house areas associated with the storage, handling or processing of lead-containing materials; and
  - (C) Weekly cleanings of all areas where lead-containing wastes generated from housekeeping activities are stored, disposed of, recovered or recycled.
  - (D) Initiate immediate cleaning, no later than one hour, after any maintenance activity or event including, but not limited to, accidents, process upsets, or equipment malfunction, that causes deposition of fugitive lead-dust onto areas specified in subparagraph (h)(1)(A) through (h)(1)(C). ~~Immediate cleanings of roof tops shall be completed within 72 hours if~~ If the facility can demonstrate that delays were due to safety or timing issues associated with obtaining equipment required to implement this requirement, immediate cleanings of roof tops shall be completed within 72 hours.
- (2) Inspect all total enclosures and facility structures that house, contain or control any lead point source or fugitive lead-dust emissions at least once a month. Any gaps, breaks, separations, leak points or other possible routes for emissions of lead or fugitive lead-dust to ambient air shall be permanently repaired within 72 hours of discovery. The Executive Officer may approve a request for an extension beyond the 72-hour limit if the request is submitted before the limit is exceeded.
- (3) Upon receipt, immediately send any lead-acid battery that is cracked or leaking ~~shall be immediately sent~~ to the battery breaking area for processing or ~~stored~~ storage pursuant to paragraph (h)(6).
- (4) Pave, concrete, asphalt, or otherwise encapsulate all facility grounds as approved by the Executive Officer. Facility grounds used for plant life that

are less than a total surface area of 100 square feet shall not be subject to encapsulation. Facility grounds requiring removal of existing pavement, concrete, asphalt or other forms of encapsulation, necessary for maintenance purposes shall not require encapsulation while undergoing work, and shall be re-encapsulated immediately after all required work is completed. All work shall be conducted in accordance with subdivision (i).

- (5) Remove any weather cap installed on any stack that is a source of lead emissions.
- (6) Store all materials capable of generating any amount of fugitive lead-dust including, but not limited to, slag and any other lead-containing waste generated from the housekeeping requirements of subdivision (h) and maintenance activities of subdivision (i), in sealed, leak-proof containers, unless located within a total enclosure.
- (7) Transport all materials capable of generating any amount of fugitive lead-dust including, but not limited to, slag and any other waste generated from housekeeping requirements of subdivision (h), within closed conveyor systems or in sealed, leak-proof containers, unless located within a total enclosure.
- (8) Initiate removal of any lead-containing material, including sludge, from the entire surface area of any surface impoundment pond or reservoir holding storm water runoff or spent water from housekeeping activities within 1 hour after the water level is  $\leq$  1 inch above the bottom of the pond or reservoir. Removal of lead-containing material is required to be completed as soon as possible, and no later than six calendar days after the time initiation of the removal was required. Thereafter, surfaces shall be washed down weekly in a manner that does not generate fugitive lead-dust until the pond or reservoir is used again for holding water.
- (9) Maintain and Use an Onsite Mobile Vacuum Sweeper or Vacuum  
The owner or operator of a large lead-acid battery recycling facility shall maintain an onsite mobile vacuum sweeper that is in compliance with District Rule 1186, or a vacuum equipped with a filter(s) rated by the manufacturer to achieve a 99.97% capture efficiency for 0.3 micron particles to conduct the following sweeping activities:
  - (A) Vacuum sweep all paved, concreted or asphalted facility areas subject to vehicular or foot traffic three times per day and occurring at least once per operating shift with each event not less than four



- hours apart, unless located within a total enclosure vented to a lead control device.
- (B) Immediately vacuum sweep any area specified in subparagraph (h)(9)(A), no later than one hour after any maintenance activity or event including accidents, process upsets, or equipment malfunction that results in the deposition of fugitive lead-dust.
  - (C) Vacuum sweeping activities specified in paragraph (h)(9) shall not be required during days of measurable precipitation.
- (10) Except when inside a total enclosure, all lead or arsenic containing trash and debris shall be placed in covered containers that remain covered at all times except when trash or debris is actively transferred. Trash and debris containers shall be free of liquid or dust leaks.
- (11) Post signs at all entrances and truck loading and unloading areas indicating a plant-wide speed limit of 5 miles per hour.
- (i) Maintenance Activity
- (1) ~~Beginning November 5, 2010, the~~ The owner or operator of a large lead-acid battery recycling facility shall conduct any maintenance activity in a negative air containment enclosure, vented to a permitted negative air machine equipped with a filter(s) rated by the manufacturer to achieve a 99.97% capture efficiency for 0.3 micron particles, that encloses all affected areas where fugitive lead-dust generation potential exists, unless located within a total enclosure or approved by the Executive Officer. Any maintenance activity that cannot be conducted in a negative air containment enclosure due to physical constraints, limited accessibility, or safety issues when constructing or operating the enclosure shall be conducted:
    - (A) In a partial enclosure, barring conditions posing physical constraints, limited accessibility, or safety issues;
    - (B) Using wet suppression or a vacuum equipped with a filter(s) rated by the manufacturer to achieve a 99.97% capture efficiency for 0.3 micron particles, at locations where the potential to generate fugitive lead-dust exists prior to conducting and upon completion of the maintenance activity. Wet suppression or vacuuming shall also be conducted during the maintenance activity barring safety issues;
    - (C) While collecting 24-hour samples at monitors for every day that maintenance activity is occurring notwithstanding paragraph (j)(2);

and

- (D) Shall be stopped immediately when instantaneous wind speeds are  $\geq$  ~~25~~20 mph. Maintenance work may be continued if it is necessary to prevent the release of lead emissions;
  - (E) All concrete or asphalt cutting or drilling performed outside of a total enclosure shall be performed under 100% wet conditions; and
  - (F) Grading of soil shall only be performed on soils sufficiently wet to prevent fugitive dust.
- (2) Store or clean by wet wash or a vacuum equipped with a filter(s) rated by the manufacturer to achieve a 99.97% capture efficiency for 0.3 micron particles, all lead-contaminated equipment and materials used for any maintenance activity immediately after completion of work in a manner that does not generate fugitive lead-dust.
- (j) Ambient Air Monitoring and Sampling Requirements
- ~~Prior to January 1, 2011, ambient air monitoring and sampling shall be conducted pursuant to District Rule 1420. No later than January 1, 2011, the~~ The owner or operator of a large lead-acid battery recycling facility shall conduct ambient air monitoring and sampling as follows:
- (1) Collect samples from a minimum of four sampling sites. Locations for sampling sites shall be approved by the Executive Officer.
    - (A) Locations for sampling sites shall be based on maximum expected ground level lead and/or arsenic concentrations, at or beyond the property line, as determined by Executive Officer-approved air dispersion modeling calculations and emission estimates from all lead and arsenic point sources and fugitive lead-dust and arsenic-dust sources, and other factors including, but not limited to, population exposure and seasonal meteorology.
    - (B) The Executive Officer may require one or more of the four sampling sites to be at locations that are not based on maximum ground level lead and/or arsenic concentrations, and that are instead at locations at or beyond the property line that are representative of upwind or background concentrations.
    - (C) Sampling sites at the property line may be located just inside the fence line on facility property if logistical constraints preclude placement outside the fence line at the point of maximum expected

- ground level lead and/or arsenic concentrations.
- (2) Collect ambient lead and arsenic samples as follows:
- (A) Lead samples shall be collected daily as 24-hour, midnight-to-midnight, samples at all sites ~~for 30 consecutive days from the date of initial sampling, followed by one 24-hour, midnight-to-midnight, sample collected at least once every three calendar days, on a schedule approved by the Executive Officer.~~
- (B) Arsenic samples shall be collected daily as 24-hour, midnight-to-midnight, samples collected at all sites ~~least once every three calendar days, on a schedule approved by the Executive Officer.~~
- (C) If a 24-hour, midnight-to-midnight sample was not collected due to a monitor malfunction or other occurrence beyond the control of the facility, the owner or operator shall:
- (i) Report with a notification made to 1-800-CUT-SMOG within 2 hours of knowing that the 24-hour, midnight-to-midnight sample was not collected providing the facility name, name of the monitor, the date of the occurrence, and the reason that the 24-hour midnight-to-midnight sample was not collected;  
and
- (ii) The operator shall not miss a 24-hour, midnight-to-midnight sample for more than one day over a consecutive 30 day period.
- (3) Submit samples collected pursuant to paragraphs (j)(1) and (j)(2) to a laboratory approved under the SCAQMD Laboratory Approval Program for analysis within three calendar days of collection and calculate ambient lead and arsenic concentrations for individual 24-hour samples within 15 calendar days of the end of the calendar month in which the samples were collected. Duplicate samples shall be made available and submitted to the District upon request by the Executive Officer.
- (4) Sample collection for lead and/or arsenic shall be conducted using Title 40, CFR 50 Appendix B - *Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High Volume Method)*, or U.S. EPA-approved equivalent methods, and sample analysis for lead shall be conducted using Title 40, CFR 50 Appendix G - *Reference Method for the Determination of Lead in Suspended Particulate Matter Collected from Ambient Air*, or U.S. EPA-approved equivalent methods. Sample analysis

for arsenic shall be conducted using U.S. EPA Compendium Method IO-3.5 - *Determination of Metals in Ambient Particulate Matter Using Inductively Coupled Plasma/Mass Spectrometry (ICP/MS)*; EPA Compendium Method IO-3.5; *In IO Compendium of Methods for the Determination of Inorganic Compounds in Ambient Air*. Alternatively, sample analysis for arsenic may be conducted using the District's *Standard Operating Procedure for The Determination of Metals in Ambient Particulate Matter by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)*.

- (5) Continuously record wind speed and direction data at all times using equipment approved by the Executive Officer at a minimum of one location and placement approved by the Executive Officer.
- (6) Ambient air quality monitoring shall be conducted by persons approved by the Executive Officer and sampling equipment shall be operated and maintained in accordance with U.S. EPA-referenced methods.
- (7) All ambient air quality monitoring systems required by this subdivision shall be equipped with a backup, uninterruptible power supply to ensure continuous operation of the monitoring system during a power outage.
- (8) Cleaning activities including, but not limited to, wet washing and misting, that result in damage or biases to samples collected shall not be conducted within 10 meters of any sampling site required under this subdivision.
- (9) ~~On and after January 1, 2012, Prior to 1, 201, if~~ If the owner or operator of a large lead-acid battery recycling facility exceeds an ambient air lead concentration  $0.150 \mu\text{g}/\text{m}^3$  ~~measured pursuant to paragraph (d)(2)(d)(1),~~ the owner or operator shall comply with the curtailment provisions of subdivision (o).
  - (A) ~~Begin daily ambient air monitoring and sampling no later than three calendar days of the time the facility knew or should have known of the exceedance. Conduct daily ambient air monitoring and sampling for sixty (60) consecutive days at each sampling site that measured an exceedance with paragraph (d)(2).~~
  - (B) ~~The 60 consecutive day period shall be restarted for any subsequent exceedance.~~
  - (C) ~~Comply with the curtailment requirements of subdivision (p).~~
- (10) ~~On and after February 1, 2014, if~~ If a large lead-acid battery recycling facility exceeds an ambient air concentration of arsenic of  $10.0 \text{ ng}/\text{m}^3$  pursuant to paragraph ~~(d)(6)(d)(5),~~ the owner or operator shall comply with

the curtailment requirements of subdivision (o).:-

- ~~(A) Begin daily ambient air monitoring and sampling no later than three calendar days from the time the facility knew or should have known of the exceedance. Conduct daily ambient air monitoring and sampling for sixty (60) consecutive days at each sampling site that measured an exceedance pursuant to paragraph (d)(6).~~
- ~~(B) Restart the 60-day consecutive period for any subsequent exceedance.~~
- ~~(C) Comply with the curtailment requirements of subdivision (p).~~

(11) The owner or operator of a large lead-acid battery recycling facility shall retain lead and arsenic samples collected pursuant to this subdivision for one year. The samples shall be stored in an individually sealed container and labeled with the applicable monitor and date. Upon request, the samples shall be provided to the Executive Officer within one business day.

(k) Source Tests

- (1) The owner or operator of a large lead-acid battery recycling facility shall conduct a source test of all lead point sources at least annually to demonstrate compliance with the mass emissions standards specified in subdivision (f). If the results of the most recent source test for a lead point source demonstrating compliance with the lead emission standard of subdivision (f) ~~demonstrate~~ are below an emissions rate of 0.00250.0012 pounds of lead per hour ~~or less~~, the next test for that lead point source shall be performed no later than 24 months after the date of the most recent test.
- (2) ~~Beginning January 10, 2014, the~~ The owner or operator of a large lead-acid battery recycling facility shall conduct a source test for all arsenic point sources, and all benzene and 1,3-butadiene point sources, excluding emission control devices on total enclosures, at least annually to demonstrate compliance with the mass emissions standards specified in subdivision (f). If the results of the most recent source test demonstrating compliance with the arsenic, benzene, and 1,3-butadiene mass emissions standards of subdivision (f) are below the emission rates specified in subparagraphs (k)(2)(A) through (k)(2)(C), the next source test for those point sources shall be performed no later than 24 months after the date of the most recent source test.

- (A) 0.000860 pound of arsenic per hour;

- (B) 0.0386 pound of benzene per hour; and
  - (C) 0.00257 pound of 1,3-butadiene per hour.
- (3) ~~The owner or operator of a large lead-acid battery recycling facility with an existing lead emission control device in operation before November 5, 2010 shall conduct a source test for it no later than January 1, 2011.~~ The owner or operator of a large lead-acid battery recycling facility with a new or modified lead control device with initial start-up on or after November 5, 2010 shall conduct the initial source test for it within 60 calendar days after initial start-up.
- (4) Prior to conducting a source test pursuant to paragraph (k)(1), (k)(2), (k)(3), or (k)(13), the owner or operator of a large lead-acid battery recycling facility shall submit a pre-test protocol to the Executive Officer for approval at least 60 calendar days prior to conducting the source test. The pre-test protocol shall include the source test criteria of the end user and all assumptions, required data, and calculated targets for testing the following:
- (A) Target arsenic, benzene, lead, or 1,3-butadiene mass emission standard;
  - (B) Preliminary target pollutant analytical data;
  - (C) Planned sampling parameters; and
  - (D) Information on equipment, logistics, personnel, and other resources necessary for an efficient and coordinated test.
- (5) The owner or operator of a large lead-acid battery recycling facility shall notify the Executive Officer in writing one week prior to conducting any source test required by paragraph (k)(1), (k)(2), (k)(3), or (k)(13).
- (6) The owner or operator of a large lead-acid battery recycling facility shall notify the Executive Officer within three business days, including Mondays, of when the facility knew or should have known of any source test result that exceeds any of the emission standards specified in subdivision (f). Notifications shall be made to 1-800-CUT-SMOG and followed up in writing with the results of the source tests within seven (7) days of notification.
- (7) Source tests shall be conducted while operating at a minimum of 80% of equipment permitted capacity and in accordance with any of the following applicable test methods:
- (A) SCAQMD Method 12.1 - *Determination of Inorganic Lead Emissions from Stationary Sources Using a Wet Impingement Train*

- (B) ARB Method 12 – *Determination of Inorganic Lead Emissions from Stationary Sources*
  - (C) EPA Method 12 – *Determination of Inorganic Lead Emissions from Stationary Sources*
  - (D) ARB Method 436 – *Determination of Multiple Metal Emissions from Stationary Sources*
  - (E) EPA Method TO-15 – *Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially-Prepared Canisters and Analyzed By Gas Chromatography/Mass Spectrometry (GC/MS)*
  - (F) CARB Method 410A – *Determination of Benzene from Stationary Sources (Low Concentration Gas Chromatographic Technique)*
  - (G) CARB Method 422.102 – *Determination of Volatile Organic Compounds (VOCs) in Emissions from Stationary Sources*
- (8) The average of triplicate samples, obtained according to approved test methods specified in paragraph (k)(7), shall be used to determine compliance or to report source test results required under paragraph (k)(13).
- (9) The operator may use alternative or equivalent source test methods as defined in U.S. EPA 40 CFR 60.2, approved in writing by the Executive Officer, in addition to the Air Resources Board and/or the U.S. EPA, as applicable.
- (10) The operator shall use a test laboratory approved under the SCAQMD Laboratory Approval Program for the source test methods cited in this subdivision. If there is no approved laboratory, then approval of the testing procedures used by the laboratory shall be granted by the Executive Officer on a case-by-case basis based on SCAQMD protocols and procedures.
- (11) When more than one source test method or set of source test methods are specified for any testing, the application of these source test methods to a specific set of test conditions is subject to approval by the Executive Officer. In addition, a violation established by any one of the specified source test methods or set of source test methods shall constitute a violation of the rule.
- (12) An existing source test conducted on ~~or~~ and after January 1, 2009 for lead emission control devices existing before November 5, 2010 may be used as the initial source test specified in paragraph (k)(1) to demonstrate compliance with the control standard of subdivision (f) upon Executive Officer approval. The source test shall meet, at a minimum, the following

criteria:

- (A) The test is the most recent conducted since January 1, 2009;
  - (B) The test demonstrated compliance with the control standard of subdivision (f); ~~and~~
  - (C) The test is representative of the method to control emissions currently in use; and
  - (D) The test was conducted using applicable and approved test methods specified in paragraphs (k)(7), (k)(9), or (k)(10).
- (13) Beginning January 10, 2014, the owner or operator of a large lead-acid battery recycling facility shall conduct two source tests for benzene and 1,3-butadiene emissions from all emission control devices on total enclosures as follows:
- (A) First source test conducted no later than March 1, 2014.
  - (B) Second source test conducted no later than September 1, 2014.
  - (C) Source tests on all emission control devices on total enclosures must be completed within a time period of 72 hours or less.
- (14) Testing conducted by the facility, by the District, or by a contractor acting on behalf of the District or the facility to determine compliance with this rule shall be performed according to the most recent District-approved test protocol for the same purpose or compounds.
- (15) Reports from source testing conducted pursuant to subdivision (k) shall be submitted to the District in 90 days or less after completion of testing.

(l) New Facilities

The owner or operator of a large lead-acid battery recycling facility beginning construction or operations on ~~or~~ and after November 5, 2010 shall:

- (1) Demonstrate to the satisfaction of the Executive Officer that the facility is not located in an area that is zoned for residential or mixed use; ~~and~~
- (2) Demonstrate to the satisfaction of the Executive Officer that the facility is not located within 1,000 feet from the property line of a sensitive receptor, a school under construction, park, or any area that is zoned for residential or mixed use. The distance shall be measured from the property line of the new facility to the property line of the sensitive receptor; and
- (3) Submit complete permit applications for all equipment required by this rule prior to beginning construction or operations, and otherwise on or before the time required by District rules.



## (m) Recordkeeping

- (1) The owner or operator of a large lead-acid battery recycling facility shall keep records of the following:
  - (A) Daily records indicating amounts of lead-containing material processed, including, but not limited to, purchase records, usage records, results of analysis, or other District-approved verification to indicate processing amounts;
  - (B) Results of all ambient air lead and arsenic monitoring, meteorological monitoring, and other data specified by subdivision (j); ~~and~~
  - (C) Records of housekeeping activities completed as required by subdivision (h), maintenance activities of subdivision (i), and emission control device inspection and maintenance requirements of paragraph (f)(8), including the name of the person performing the activity, and the dates and times on which specific activities were completed; ~~and~~.
  - (D) Records of unplanned shutdowns of any smelting furnace including the date and time of the shutdown, description of the corrective measures taken, and the re-start date and time.
- (2) The owner or operator of a large lead-acid battery recycling facility shall maintain all records for five years, and keep records onsite for at least two years ~~onsite~~.

## (n) Reporting

- (1) Ambient Air Monitoring Reports
  - (A) ~~Beginning no later than January 1, 2011, the~~ The owner or operator of a large lead-acid battery recycling facility shall report by the 15<sup>th</sup> of each month to the Executive Officer, the results of all ambient air lead and wind monitoring for each preceding month, or more frequently if determined necessary by the Executive Officer. The report shall include the results of individual 24-hour samples and 30-day rolling averages for each day within the reporting period.
  - (B) ~~Beginning no later than March 15, 2014, the~~ The owner or operator of a large lead-acid battery recycling facility shall report by the 15<sup>th</sup> of each month to the Executive Officer, the results of all ambient air

arsenic and wind monitoring for each preceding month, or more frequently if determined necessary by the Executive Officer and the owner or operator is notified in writing of the required frequency.

(C) Any exceedances of ambient air concentrations specified in paragraphs (d)(1) ~~(d)(2)~~ and (d)(65) shall be reported with a notification made to the 1-800-CUT-SMOG within 24 hours of receipt of the completed sample analysis required in paragraph (j)(3), followed by a written report to the Executive Officer no later than three calendar days after the notification. The written report shall include the causes of the exceedance and the specific corrective actions implemented.

(D) On and after July 1, 2015, the owner or operator of a large lead-acid battery recycling facility shall report the following information in writing to the Executive Officer within 72 hours of when the facility knew or should have known that the ambient air concentration of lead was greater than 0.300  $\mu\text{g}/\text{m}^3$  for any 24-hour sample:

(i) Date of the occurrence;

(ii) Name of the monitor;

(iii) Ambient lead concentration at the monitor for the 24 hour sample;

(iv) Potential cause or causes of the occurrence; and

(v) Potential remedies to prevent the reoccurrence.

(2) Shutdown, Turnaround, and Maintenance Activity Notification

The owner or operator of a large lead-acid battery recycling facility shall:

(A) Notify the Executive Officer and the public within one hour after an unplanned shutdown of any emission control device has occurred, regardless of whether any emissions were associated with or caused by the unplanned shutdown. If the unplanned shutdown involves a breakdown pursuant to Rule 430, the breakdown notification report required by Rule 430 shall serve in lieu of this notification to the Executive Officer. The notification shall include the following information:

(i) Date and time the unplanned shutdown of the emission control device(s) occurred;

(ii) Description of the shutdown emission control device and the processes and/or equipment vented by the emission control

- device;
- (iii) Description of when the processes and/or equipment vented by the emission control device were shutdown, including expected shutdown time;
  - (iv) Reason why the emission control device was shutdown;
  - (v) Total duration of the unplanned shutdown, if known; and
  - (vi) Facility contact name and phone number for further information regarding the unplanned shutdown.
- (B) ~~Beginning May 1, 2014, if~~ If an unplanned shutdown of any emission control device occurs, and the reason for the unplanned shutdown cannot be determined within the one-hour reporting period under subparagraph (n)(2)(A), the owner or operator shall investigate the reason for the unplanned shutdown and notify the Executive Officer of the reason for the unplanned shutdown within 5 business days of the event. If the reason for the unplanned shutdown is still not known within 5 business days of the event, the owner or operator shall notify the Executive Officer within 5 business days of the event and:
- (i) Use an independent third party approved by the Executive Officer to conduct an investigation at the facility to determine the reason for the unplanned shutdown of any emission control device subject to this rule, ~~which~~ The investigation shall includes but is not limited to:
    - (I) Physically inspecting the control equipment and surrounding portions of the facility which may provide information to understand the reason for the unplanned shutdown of emission control equipment; and
    - (II) Reviewing equipment maintenance and operation records, logs, and other documentation which may provide information to understand the reason for the unplanned shutdown of emission control equipment;
  - (ii) Use an independent third party approved by the Executive Officer to inspect all equipment repaired or replaced in response to the unplanned shutdown of emission control equipment, to ensure affected control equipment can operate

- properly; and
- (iii) Within 30 calendar days of the reported unplanned shutdown, provide a written report to the Executive Officer and the Director of the California Department of Toxic Substances Control. The owner or operator shall notify the Executive Officer if an approved independent third party is not available for use, or the list of approved independent third parties has not yet been developed by the Executive Officer, and shall submit the written report 30 days from when an approved third party is available. The written report shall include the following information:
    - (I) Date of the unplanned shutdown of emission control equipment;
    - (II) Reason for the unplanned shutdown of emission control equipment;
    - (III) List of all equipment repaired or replaced in response to the unplanned shutdown and corrective actions taken to prevent recurrence of the unplanned shutdown of emission control equipment; and
    - (IV) Written verification that the affected emission control equipment is operational. If the affected equipment is not operational, provide an approximate date the subject equipment is expected to be operational.
  - (iv) The owner or operator shall be responsible for reimbursement to the District for any and all expenses incurred by the independent third-party investigator in the investigation, inspection, and generation of a written report to determine the cause of an unplanned shutdown of any emission control equipment subject to this rule, as required by subparagraph (n)(2)(B). The owner or operator shall reimburse the District within 30 days of notification from the Executive Officer that payment is due.
  - (v) The reimbursement specified in clause (n)(2)(B)(iv) shall not exceed \$12,000 per third-party investigation.
- (C) Notify the Executive Officer and the public at least ten calendar days prior to a planned turnaround or shutdown of any smelting furnace,

battery breaker, or emission control device subject to this rule that results in arsenic, benzene, 1,3-butadiene, or lead emissions. The notification shall specify the subject equipment and the start and end date of the turnaround or shutdown period.

- (D) Notify the Executive Officer at least ten calendar days prior to the beginning of maintenance activity, as defined in paragraph (c)(17), that is conducted routinely on a monthly or less frequent basis. The notification and report required under subparagraph (n)(2)(F) shall include, at a minimum, the following:
  - (i) Dates, times, and locations of activities to be conducted;
  - (ii) Description of activities;
  - (iii) Name of person(s)/company conducting the activities;
  - (iv) Lead abatement procedures, including those specified in subdivision (i), to be used to minimize fugitive lead-dust emissions; and
  - (v) Date of expected re-start of equipment.
- (E) Notify the public at least ten calendar days prior to the beginning of building construction, renovation, or demolition, and resurfacing, repair, or removal of ground pavement, concrete or asphalt if such activities are conducted outside of a total enclosure and generate fugitive lead-dust. The notification shall include, at a minimum, the following:
  - (i) Dates, times, and locations of activities to be conducted;
  - (ii) Description of activities; and
  - (iii) Date of expected re-start of equipment.
- (F) Provide the notification to the Executive Officer required under subparagraphs (n)(2)(A), (n)(2)(C), and (n)(2)(D) to 1-800-CUT-SMOG followed by a written notification report to the Executive Officer no later than three business days, including Mondays, after the unplanned shutdown occurred.
- (G) Provide notification to the public required under subparagraphs (n)(2)(A), (n)(2)(C), and (n)(2)(E) through a facility contact or pre-recorded notification center that is accessible 24 hours a day, 7 days a week, and through electronic mail using a list of recipients provided by the Executive Officer. Another method of notification to the public may be used provided it is approved by the Executive

Officer.

(H) Install a sign indicating the phone number for the facility contact or pre-recorded notification center that meets the following requirements, unless otherwise approved in writing by the Executive Officer:

- (i) Installed within 50 feet of the main entrance of the facility and in a location that is visible to the public;
- (ii) Measures at least 48 inches wide by 48 inches tall;
- (iii) Displays lettering at least 4 inches tall with text contrasting with the sign background; and
- (iv) Located between 6 and 8 feet above grade from the bottom of the sign.

(I) Install a sign indicating the phone number for the facility contact or pre-recorded notification center that meets the following requirements, unless otherwise approved in writing by the Executive Officer:

- (i) Installed at all entrances and at intervals of 330 feet or less along the property line of the site or along the perimeter of the facility;
- (ii) Measures at least 30 inches wide by 30 inches tall;
- (iii) Displays lettering at least 2 inches tall with text contrasting with the sign background; and
- (iv) Located between 6 and 8 feet above grade from the bottom of the sign; and
- (v) In addition to the phone number, the sign shall also display the following information:

Caution

Lead-Acid Battery Recycling Facility

Call before digging

(J) Notify the Executive Officer at least ten calendar days prior to a planned breach or within one hour after an unplanned breach to a total enclosure such that it no longer meets the definition of a total enclosure pursuant to paragraph (c)(29). The notification shall include the following information:

- (i) Date and time of planned or unplanned breach to the total enclosure;



~~subdivision (j) or at any District installed monitor, the owner or operator of a large lead-acid battery recycling facility shall submit a study addressing the technical, economic and physical feasibility of achieving a total facility mass lead emission rate of 0.003 pounds per hour from all lead point sources. The study shall be submitted within 30 calendar days after exceeding  $0.120 \mu\text{g}/\text{m}^3$ , averaged over any 30 consecutive days. Subsequent exceedances of ambient air concentrations of lead of  $0.120 \mu\text{g}/\text{m}^3$  do not trigger another feasibility study.~~

(p0) Curtailment Requirements

- (1) ~~On and after February 1, 2014, the~~The owner or operator of a large lead-acid battery recycling facility shall implement the following mandatory daily process curtailments if emissions are discharged into the atmosphere which contribute to monitored ambient air concentrations of lead, as determined pursuant to paragraph ~~(d)(1) and (d)(2)~~, and/or ambient air concentrations of arsenic, as determined pursuant to paragraph (d)(65), that exceed the thresholds listed below in Table 1:



**Table 1 – Process Curtailments Based on Ambient Air Concentrations of Lead and/or Arsenic**

Air Contaminant	Monitored Ambient Air Concentration	Reduction in Feedstock Charged to Reverberatory Furnace
Lead	<u>Prior to January 1, 2016:</u> $>0.150 - 0.230 \mu\text{g}/\text{m}^3$ <u>January 1, 2016 to December 31, 2016:</u> $>0.110 - 0.230 \mu\text{g}/\text{m}^3$ <u>On and after January 1, 2017:</u> $>0.100 - 0.230 \mu\text{g}/\text{m}^3$	15%
	$>0.230 - 0.300 \mu\text{g}/\text{m}^3$	25%
	$>0.300 - 0.375 \mu\text{g}/\text{m}^3$	50%
	$>0.375 \mu\text{g}/\text{m}^3$	75%
Arsenic	$>10.0 - 15.0 \text{ ng}/\text{m}^3$	15%
	$>15.0 - 20.0 \text{ ng}/\text{m}^3$	25%
	$>20.0 - 25.0 \text{ ng}/\text{m}^3$	50%
	$>25.0 \text{ ng}/\text{m}^3$	75%

- (A) The process curtailments for exceedances of the ambient air concentration of lead thresholds in Table 1 shall remain in effect until the monitoring results at each affected monitoring station are at or below the ambient lead concentration limits specified in paragraph (d)(1)  $0.150 \mu\text{g}/\text{m}^3$  of lead averaged over any 30 consecutive days, for a period of 30 consecutive days, or the monitoring results at each affected monitoring station are at or below  ~~$0.120 \mu\text{g}/\text{m}^3$~~   $0.100 \mu\text{g}/\text{m}^3$  for at least 10 consecutive days and no other monitor exceeds the thresholds specified in subdivision (d); and
- (B) The process curtailments for exceedances of the ambient air concentration of arsenic thresholds in Table 1 shall remain in effect until the monitoring results at each affected monitoring station are at or below  $10.0 \text{ ng}/\text{m}^3$  of arsenic averaged over a 24-hour time period, for a period of at least 30 consecutive days.
- (2) The owner or operator of a large lead-acid battery recycling facility shall implement the following mandatory daily process curtailments if the total facility mass emissions from all lead and/or arsenic point sources exceed the thresholds listed below in Table 2:

**Table 2 – Process Curtailments Based on Total Facility Mass Lead  
and/or Arsenic Emissions From All Point Sources**

Effective Date	Air Contaminant	Total Facility Mass Emission Rate (lbs/hour)	Reduction in Feedstock Charged to Reverberatory Furnace	
On and after January 10, 2014	Lead	<u>Prior to January 1, 2016</u> >0.045 – 0.0675	15%	
		<u>On and after January 1, 2016</u> ≥0.023 – 0.0675		
		>0.0675 – 0.09		25%
		>0.09 – 0.1125		50%
No later than 60 days after January 10, 2014 to December 31, 2014	Arsenic	>0.00285 – 0.00428	15%	
		>0.00428 – 0.00570	25%	
		>0.00570 – 0.00713	50%	
		>0.00713	75%	
On and after January 1, 2015	Arsenic	>0.00114 – 0.00171	15%	
		>0.00171 – 0.00228	25%	
		>0.00228 – 0.00285	50%	
		>0.00285	75%	

- (A) The process curtailments in Table 2 shall remain in effect until the facility demonstrates compliance using the most recent District-approved source tests conducted by the facility or the District, pursuant to subdivision (k).
- (3) Reductions in feedstock charged to the reverberatory furnace required by paragraphs ~~(p)(1) or (p)(2)~~(o)(1) or (o)(2) shall be based on the daily average of materials charged to the reverberatory furnace over the previous 90 days of operation prior to when the facility knew or should have known of the exceedance.
- (4) The process curtailments in Table 1 and Table 2 shall begin within 48 hours of the time when the owner or operator receives sampling results indicating

an exceedance of any lead and/or arsenic threshold listed in Table 1 or Table 2; ~~and~~.

- (5) The owner or operator of a large lead-acid battery recycling facility may temporarily exceed the mandatory process curtailments specified in Table 1 of paragraph ~~(p)(1)(o)(1)~~ and Table 2 of paragraph ~~(p)(2)(o)(2)~~, only for the period of time required to perform source tests to demonstrate compliance with this rule.

~~(pp)~~ Severability

If any provision of this rule is held by judicial order to be invalid, or invalid or inapplicable to any person or circumstance, such order shall not affect the validity of the remainder of this rule, or the validity or applicability of such provision to other persons or circumstances.

**Appendix 1 – Content of Initial Facility Status Reports**

Initial compliance status reports shall contain, at a minimum, the following information:

1. Facility name, District Facility ID number, facility address, owner/operator name, and telephone number.
2. The distance from the property line of the facility to the property line of the nearest commercial/industrial building and sensitive receptor.
3. Worker and sensitive receptor locations, if they are located within one-quarter mile from the center of the facility.
4. Building parameters
  - Stack heights in feet (point sources); or
  - Building area in square feet (volume sources).
5. A description of the types of lead processes performed at the facility.
6. The following information shall be provided for each of the last five calendar years prior to November 5, 2010:
  - Annual amount of lead-containing material processed;
  - The maximum and average daily and monthly operating schedules;
  - The maximum and average daily and monthly lead-processing rates for all equipment and processes;
  - The maximum and average daily and annual emissions of lead from all emission points and fugitive lead-dust sources.
7. The approximate date of intended source tests for all lead emission control devices, as required by subdivision (k) of this rule.
8. Engineering drawings, calculations or other methodology to demonstrate compliance with paragraphs (d)(1) through ~~(d)(3)~~ and (k).
9. Air dispersion modeling calculations using procedures approved by the Executive Officer to determine the location of sampling sites as required by subdivision (j).
10. All information necessary to demonstrate means of compliance with subdivision (j).
11. The name, title, and signature of the responsible official certifying the accuracy of the report, attesting to whether the source has complied with the provisions of this rule.
12. The date of the report.

**Appendix 2 – Content of Ongoing Facility Status Reports**

Ongoing facility status reports shall, at a minimum, contain the following information:

1. Facility name, District Facility ID number, facility address, owner/operator name, and telephone number.
2. The beginning and ending dates of the calendar year for the reporting period.
3. The following information shall be provided for each of the last 12 calendar months of the reporting period:
  - Annual amounts of lead-containing material processed;
  - The maximum and average daily and monthly lead-processing rates for all equipment and processes;
  - The maximum and average daily and annual emissions of lead from all emission points and fugitive lead-dust sources.
4. Worker and sensitive receptor distances, if they are located within ¼ of mile from the center of the facility and facility maximum operating schedule, if changed since submittal of the initial compliance status report or prior year's ongoing compliance status and emission reports.
5. A description of any changes in monitoring, processes, or controls since the last reporting period.
6. The name, title, and signature of the responsible official certifying the accuracy of the report.
7. The date of the report.

**Appendix 3 – Continuous Furnace Pressure Monitoring (CFPM) Plan**

The CFPM Plan shall, at a minimum, contain the following information:

1. A description of the type and design of the differential pressure monitoring device(s).
2. The specifications of the resolution, increment of measurement, and range of the differential pressure monitoring device(s).
3. A drawing and description of the exact location where each differential pressure monitoring device is to be located.
4. If differential pressure monitoring device(s) are already installed, all available recorded data of the static differential furnace pressure(s) as requested by the Executive Officer.
5. If applicable, the maximum alternative static differential furnace pressure in inches water column that the owner or operator will operate the reverberatory furnace at, and a demonstration that it can achieve emission reductions that are equivalent to or better than those achieved when operating at a pressure of -0.02 or more negative. The alternative static differential furnace pressure shall not exceed 0.4 inches water column.

## ATTACHMENT G

# SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

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### **~~Draft~~ Final Staff Report**

## **Proposed Amended Rule 1420.1 – Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities**

**February 2015**

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## INTRODUCTION

Rule 1420.1 – Emission Standards for Lead from Large Lead-acid Battery Recycling Facilities was adopted on November 5, 2010 in order to help ensure attainment of the 2008 National Ambient Air Quality Standards (NAAQS) for lead of  $0.15 \mu\text{g}/\text{m}^3$ . Rule 1420.1 controls emissions of lead and other toxic air contaminants from large lead-acid battery recycling facilities. The rule also requires large lead-acid battery recyclers to meet a lead ambient air concentration of  $0.150 \mu\text{g}/\text{m}^3$ , averaged over any 30 consecutive days, which is more stringent than the lead NAAQS, which has a longer averaging period of a rolling three month average. In addition, Rule 1420.1 includes housekeeping provisions such as regular cleaning periods, inspections and proper handling of lead containing dust and waste.

In January 2014 the SCAQMD staff reported to the Governing Board on the review of two studies that examined the technical, economic, and physical feasibility of achieving a total facility mass lead emission rate of 0.003 lb/hour from all lead point sources. Based on elevated levels of lead found in soil and surface dust by the California Department of Toxics Substances Control (DTSC), the Governing Board directed staff to begin rulemaking to consider lowering the lead point source emission rate and possibly other revisions to reduce the further accumulation of lead dust in the surrounding communities. Proposed Amended Rule (PAR) 1420.1 would, among other things, lower the ambient lead concentration limit and the point source emission rate for lead.

## PUBLIC PROCESS

PAR 1420.1 is being developed through a public process. A PAR 1420.1 Working Group was formed to provide an opportunity to discuss the proposed rule in greater detail and provide input to the SCAQMD staff throughout the rule development process. The working group was composed of a variety of stakeholders including representatives and consultants for the regulated industry; the DTSC and other agency representatives; environmental and community representatives; and other interested parties who met with SCAQMD staff to discuss elements of the proposed rule in more detail. The Working Group, which is open to the general public, met twice in October and once in November. In addition, a Public Workshop was held on October 30, 2014 to present the proposed rule and receive public comment. A second Public Workshop was held November 19, 2014.

At the January 9, 2015 Governing Board meeting, staff presented the approach for PAR 1420.1 which will lower the lead point source emission rate to 0.023 lb/hr and also lower the ambient lead concentration limit to  $0.110 \mu\text{g}/\text{m}^3$  effective January 1, 2016, and then to  $0.100 \mu\text{g}/\text{m}^3$  effective January 1, 2017. Staff also presented Quemetco's proposal to lower the overall stack emission rate to 0.003 lb/hr. As a result, the Board asked that in the adoption resolution for PAR 1420.1 that staff include a commitment to return to the Governing Board with a rule proposal in six months to lower the point source lead emission rate to 0.003 lb/hr and other options.

The SCAQMD staff maintains a PAR 1420.1 rule development webpage that includes Working Group meeting dates and times, presentations for the Working Group meetings, and other upcoming meetings and dates. The PAR 1420.1 webpage can be found at: <http://www.aqmd.gov/rules/proposed.html#1420.1>.

## BACKGROUND

### Lead

Lead is deemed a carcinogenic toxic air contaminant (TAC) by the Office of Environmental Health Hazard Assessment (OEHHA). Chronic health effects include nervous and reproductive system disorders, neurological and respiratory damage, cognitive and behavioral changes, and hypertension. Exposure to lead can also potentially increase the risk of contracting cancer or result in other adverse health effects. Lead has been classified as a probable human carcinogen by the International Agency for Research on Cancer, based mainly on sufficient animal evidence, and as reasonably anticipated to be a human carcinogen by the U.S. National Toxicology Program. Young children are especially susceptible to the effects of environmental lead because their bodies accumulate lead more readily than do those of adults, and because they are more vulnerable to certain biological effects of lead including learning disabilities, behavioral problems, and deficits in IQ.

Under the federal Clean Air Act, lead is classified as a “criteria pollutant.” Lead has observed health effects at ambient concentrations. The U.S. EPA has thoroughly reviewed the lead exposure and health effects research, and has prepared substantial documentation in the form of a Criteria Document to support the selection of the 2008 NAAQS for lead. The Criteria Document used for the development of the 2008 NAAQS for lead states that studies and evidence strongly substantiate that lead concentrations in a range of 5-10  $\mu\text{g}/\text{dL}$ , or possibly lower, could likely result in neurocognitive effects in children. The report further states that “there is no level of lead exposure that can yet be identified with confidence, as clearly not being associated with some risk of deleterious health effects.”<sup>1</sup>

### Lead National Ambient Air Quality Standard

In October 1978, the U.S. Environmental Protection Agency (EPA) promulgated the first primary and secondary NAAQS for lead under Section 109 of the Clean Air Act. Both primary and secondary standards were set at a level of 1.5  $\mu\text{g}/\text{m}^3$  averaged over a calendar quarter. Primary standards set limits to protect public health, including the health of “sensitive” populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against visibility impairment, damage to animals, crops, vegetation, and buildings.

On October 15, 2008, the EPA amended both the primary and secondary NAAQS for lead from a level of 1.5  $\mu\text{g}/\text{m}^3$  to 0.15  $\mu\text{g}/\text{m}^3$  averaged over a rolling 3-month period, and made changes to monitoring and reporting requirements. On December 31, 2010, the EPA designated a portion of Los Angeles County as nonattainment for the 2008 NAAQS for lead based on monitored air quality data from 2007-2009 that indicated a violation of the NAAQS due to, and near, two large lead-acid battery recycling facilities. In May of 2014, the U.S. EPA released its “Policy Assessment for the Review of the Lead National Ambient Air Quality Standards”, reaffirming the primary (health-based) and secondary (welfare-based) staff conclusions regarding whether to retain or revise the current standards. In January 2015 the U.S. EPA announced that the ambient lead concentration standard of 0.15  $\mu\text{g}/\text{m}^3$  averaged over a rolling 3-month period would remain unchanged.

---

<sup>1</sup> Environmental Protection Agency, Office of Research and Development, “Air Quality Criteria Document for Lead, Volumes I-II,” October 2006.

### **Rule 1420.1 Regulatory History**

Large lead-acid battery recycling facilities were originally regulated under Rule 1420 - Emission Standards for Lead which was adopted in 1992 and is applicable to any facility that uses or processes lead-containing materials. In November 2010, Rule 1420.1 was adopted to establish additional requirements for large (facilities that process more than 50,000 tons of lead annually) lead-acid battery recycling facilities, namely Exide Technologies located in Vernon, and Quemetco Inc. located in the City of Industry, to ensure compliance with the NAAQS. Rule 1420.1 included an ambient lead concentration limit of  $0.150 \mu\text{g}/\text{m}^3$  and a point source limit of 0.01 lb/hr from any single source and 0.045 lb/hr from all point sources. Additionally, the rule included a series of housekeeping provisions to further control fugitive lead emissions. During the rulemaking process there was testimony from one of the affected facilities requesting to lower the total facility lead mass emission rate limit from point sources from 0.045 lb/hr to 0.003 lb/hr. Air dispersion modeling indicated that controlling lead point source emissions to 0.01 lb/hr or less for each point source and to 0.045 lb/hr or less for total point sources, and strict adherence to the housekeeping provisions of Rule 1420.1, would achieve compliance with the ambient lead concentration limits of  $0.150 \mu\text{g}/\text{m}^3$ . Because of the air dispersion modeling and more stringent housekeeping and maintenance provisions in the rule, the Governing Board decided to retain staff's recommended limits of 0.045 lb/hr or less for total point sources and 0.01 lb/hr or less for each point source. In addition, the Governing Board strengthened the rule by requiring facilities to submit a compliance plan identifying additional lead reductions strategies and a curtailment plan and a study assessing the economic, technical, and physical feasibility of achieving a lower point source emission limit of 0.003 lb/hr, if the ambient lead concentration exceeded  $0.120 \mu\text{g}/\text{m}^3$  over a 30 day rolling average.

In March 2013, the approved AB 2588 Health Risk Assessment for Exide Technologies reported a Maximum Individual Cancer Risk of 156 in one million, a non-cancer chronic HI of 63, a non-cancer acute HI of 3.8, and a cancer burden of 10. Arsenic, benzene, and 1,3-butadiene emissions were the main contributors to the high cancer risk. As a result, on January 10, 2014, Rule 1420.1 was amended to include an arsenic ambient concentration limit of  $10.0 \text{ ng}/\text{m}^3$  averaged over a 24-hour period and point source emission limits for arsenic, benzene, and 1,3-butadiene. Curtailment provisions for lead and arsenic and requirements for installation and operation of differential pressure monitors were also included in the amendments.

In March 2014, Rule 1420.1 was amended to include requirements for the large lead-acid battery recycling facilities to participate in a multi-metals continuous emissions monitoring program with the SCAQMD.

### **Lead Emission Rate Feasibility Studies**

By 2011, both large lead-acid battery recycling facilities, Quemetco and Exide, had exceeded the  $0.120 \mu\text{g}/\text{m}^3$  ambient lead concentration Compliance Plan limit and submitted feasibility studies. Quemetco's exceedances were noteworthy as they occurred despite having a lead mass emission rate limit of less than 0.003 lb/hr from their point sources. This indicates that some portion of the exceedances might be attributed to fugitive emissions from the facilities. At the January 2014 Governing Board Hearing, staff presented the two feasibility studies of lowering lead point source emissions subject to Rule 1420.1. Quemetco's study included source tests from 2011

indicating that a total facility mass lead emission rate of 0.003 lb/hr was already being met with their existing air pollution control systems. Exide's feasibility study stated that existing controls represented greater than 99% reductions in point source lead emissions and that further emission reduction measures should be focused on fugitive emission reductions. Exide's study stated that ambient air quality modeling indicated that "additional stack emissions reductions are not expected to further reduce ambient lead concentrations." Exide's study also concluded that lowering lead point source emissions to 0.003 lb/hr were not technically, economically, or physically feasible.

In the staff findings and recommendations on the feasibility studies, staff believed that the January 2014 proposed amendments to Rule 1420.1 to reduce arsenic and other toxic organics would result in concurrent lead emission reductions. Staff had also reported that since the implementation of Rule 1420.1 and its point source emission limit of 0.045 lb/hour, although there had been exceedances of the Rule 1420.1 lead ambient limit of  $0.150 \mu\text{g}/\text{m}^3$  averaged over any 30 consecutive days, there had not been any exceedances of the lead NAAQS of  $0.15 \mu\text{g}/\text{m}^3$  over a rolling 3-month average. This was a good indication that the point source emission limit of 0.045 lb/hour was sufficient to ensure compliance with the lead NAAQS and also an indicator that the spikes in ambient lead concentrations were likely attributed to activities related to fugitive emissions instead of point source emissions.

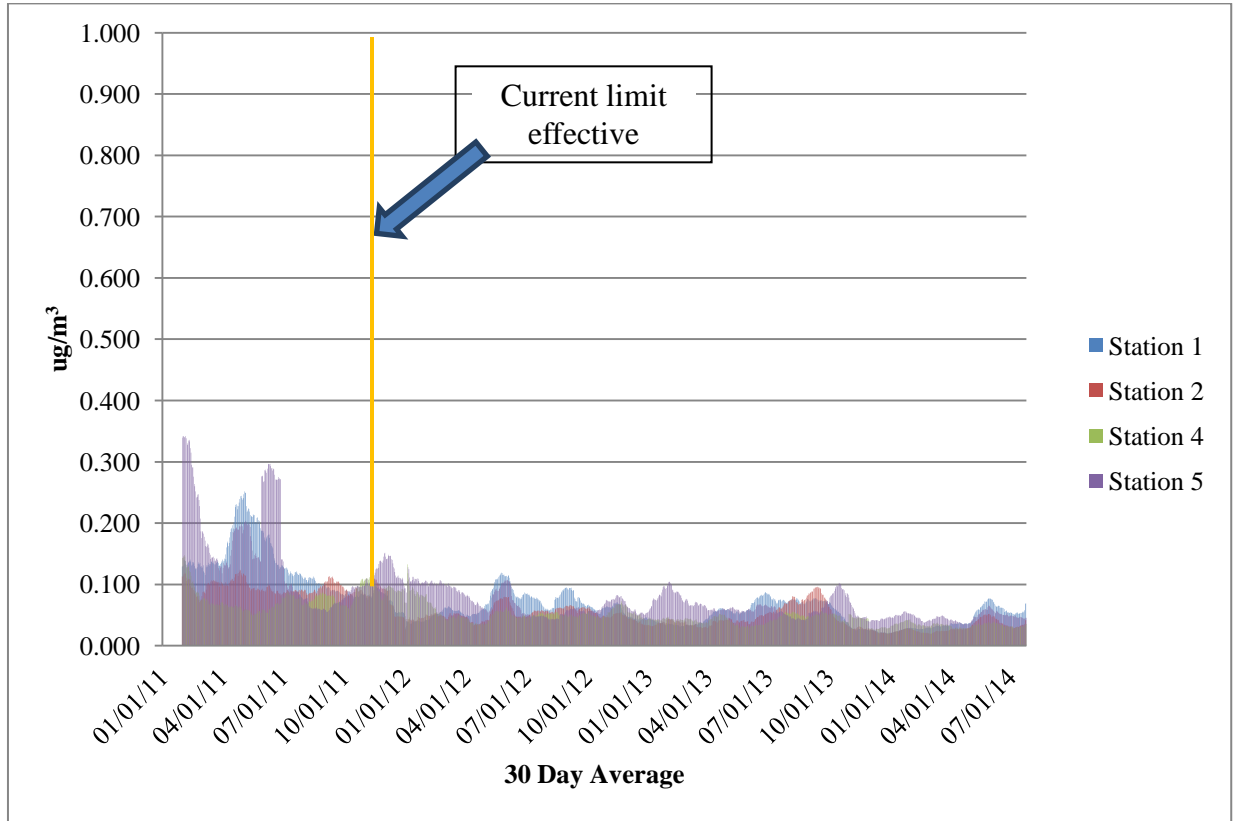
In December 2013, staff received letters from DTSC to Exide explaining that DTSC had conducted soil samples and found elevated levels of lead in surface dust and soil samples in and around the Exide facility. DTSC had commented that the lead dust is likely an accumulation of lead from decades of use, as well as fragmentation from handling and erosion. As a result of DTSC's findings, staff was concerned that lead contained in surface dust and soil can be re-entrained into the air impacting people that live and work in the surrounding community. SCAQMD staff recommended and was directed by the Governing Board to begin rulemaking to consider lowering the lead point source emission rate and possibly other revisions to reduce the further accumulation of lead dust to the surrounding communities.

### **Lead Ambient Concentration**

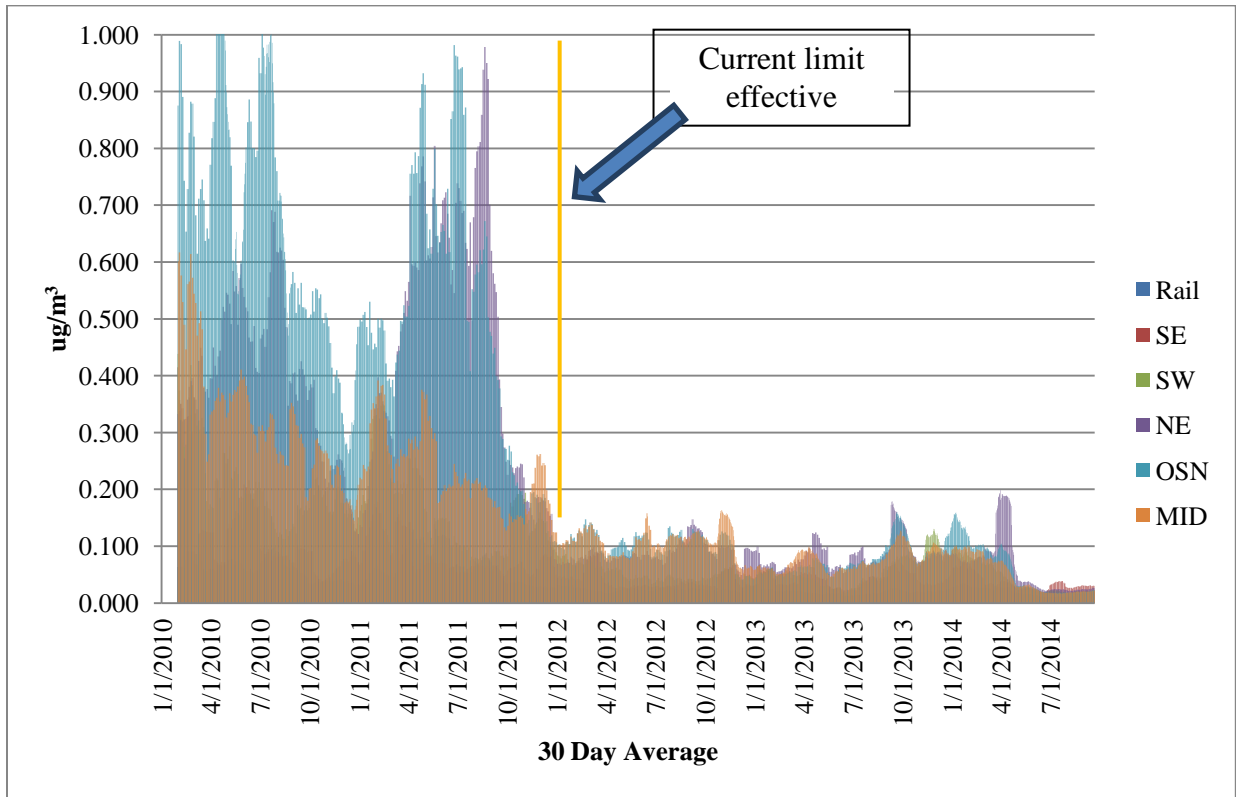
Blood lead is used as a biomarker of lead exposure by health agencies and in epidemiological and toxicological studies. Lead in ambient air contributes to lead in blood by multiple exposure pathways by both inhalation and ingestion. The relationship between ambient air lead and blood lead is the primary methodology in determining the health impacts coming from lead air pollution sources. Additionally, ambient lead is the best measure of all the lead air pollution coming from a facility. The measure of ambient lead concentration captures all potential sources: lead emitted directly through exhaust stacks (point sources), fugitive lead emissions not captured by control equipment and accumulated lead in dust and soil in the surrounding area.

Rule 1420.1 required large lead-acid battery recycling facilities to meet the  $0.150 \mu\text{g}/\text{m}^3$  ambient lead concentration, averaged over any 30 consecutive days, beginning January 1, 2012. Based on monthly averages of ambient monitoring data, there has been a reduction of ambient lead emissions at both Quemetco and Exide. Figures 1A and 1B below illustrate the reductions from Quemetco and Exide respectively.

**Figure 1A – Quemetco Fence Line Monitoring ( $\mu\text{g}/\text{m}^3$ )  
(30 Day Averages)**



**Figure 1B - Exide Fence Line Monitoring ( $\mu\text{g}/\text{m}^3$ )  
(30 Day Averages)**



## PROPOSED AMENDED RULE 1420.1

Proposed Amended Rule (PAR) 1420.1 would include revisions to the lead ambient air concentration limit, frequency of ambient lead samples, point source emission rates, compliance plan and curtailment thresholds, housekeeping and maintenance provisions, additional reporting requirements and other administrative changes detailed below.

### Ambient Air Concentration Limit (Subdivision (d))

PAR 1420.1 proposes to lower the lead ambient air concentration limit from  $0.150 \mu\text{g}/\text{m}^3$  to  $0.110 \mu\text{g}/\text{m}^3$  averaged over any 30 consecutive days as specified in subparagraph (d)(1), effective January 1, 2016. The proposed amended rule would further reduce the lead ambient air concentration limit to  $0.100 \mu\text{g}/\text{m}^3$  effective January 1, 2017. Prior to January 1, 2016, the lead ambient concentration of  $0.150 \mu\text{g}/\text{m}^3$  will remain in effect as shown in Table 1 below.

**Table 1 - PAR 1420.1 Proposed Lower Ambient Lead Limit**

<b>Effective Date</b>	<b>Ambient Air Concentration of Lead, micrograms per cubic meter (<math>\mu\text{g}/\text{m}^3</math>), averaged over any 30 days</b>
Prior to January 1, 2016	$0.150 \mu\text{g}/\text{m}^3$
<i>January 1, 2016 – December 31, 2016</i>	<i><math>0.110 \mu\text{g}/\text{m}^3</math></i>
<i>On and after January 1, 2017</i>	<i><math>0.100 \mu\text{g}/\text{m}^3</math></i>

The objective of the proposed requirement is to be more protective of public health by limiting the lead concentration in the ambient air. By limiting the ambient air lead concentration to the lowest level feasible, it will further reduce the accumulation of lead dust and reduce lead exposure from large lead-acid battery recyclers to the surrounding community. Lowering the ambient lead concentration is not inconsistent with studies that USEPA reviewed indicating that lower ambient lead concentrations would result in less impacts to children. According to USEPA, the assessment of the currently available studies continues to recognize a non-linear relationship between blood lead and effects on cognitive function, with a greater incremental effect (greater slope) at lower relative to higher blood lead levels.<sup>1</sup> Chronic health effects include increased risk of cancer, nervous and reproductive system disorders, neurological and respiratory damage, cognitive and behavioral changes, and hypertension. In addition, young children accumulate lead more readily than do those of adults are more vulnerable to certain biological effects of lead including learning disabilities, behavioral problems, and deficits in IQ.

Because of the primary, secondary, tertiary and even quaternary controls at Quemetco and Exide, combined with the fugitive nature of lead emissions associated with lead-acid battery recycling operations, stack emissions are not the main contributors to lead at all the ambient monitors. In Quemetco's case, according to emission modeling, stack emissions represent 2% or less of the

<sup>1</sup> U.S. EPA's "Policy Assessment for the Review of the Lead National Ambient Air Quality Standards," Environmental Protection Agency, May 2014



ambient lead concentrations found on the monitors. For Exide, stack emissions represent between 8% and 65% of ambient lead concentrations at the various monitors, according to source testing conducted in 2010 and 2012. As discussed below, Exide has installed additional particulate controls since then and is in the process of installing controls for arsenic that are expected to have concurrent lead emission reductions from point sources. These additional enhancements are expected to also reduce the contribution from point sources to the overall ambient concentration. Staff believes that reducing the ambient lead concentration limit will minimize further accumulation of lead from both point and fugitive sources. DTSC is in the process of requiring clean-up of the lead-containing soil. During the clean-up process, the proposed limit, along with implementation of housekeeping and specific requirements to minimize fugitive emissions during specific maintenance activities, will minimize lead emitted during soil disturbances and/or excavation. The ambient concentration limit will further minimize the rate of accumulation of lead dust.

#### **Lead Point Source Emission Rate (Subdivision (f))**

PAR 1420.1 will lower the lead point source emission limit. Staff is proposing to reduce the total facility mass lead emissions from all lead point sources under subparagraph (f)(1)(A) from 0.045 lb/hour to 0.023 lb/hour, effective January 1, 2016. Based on source testing conducted over the past six years, Quemetco can meet the proposed limit. Exide can also meet the proposed reduced lead point source emission limit based on source test results from testing conducted in 2010 and 2012 that was used in their 2013 approved AB2588 Health Risk Assessment. As seen in Table 2 below the combined point source emissions from Exide were just under 0.023 lb/hour.

**Table 2 – Exide Health Risk Assessment Source Test Rates**

<b>Associated Control Device at Exide</b>	<b>2010 Lead Emission Rate (lb/hr)</b>	<b>2012 Lead Emission Rate (lb/hr)</b>	<b>Lead Emission Rate (lb/hr)</b>
RMPS Scrubber	0.000358	---	0.000358
Material Handling BH	0.00115	---	0.00115
Soft Lead BH	0.000851	---	0.000851
Hard Lead BH	0.00102	0.0018	0.0018
Feed dryer BH	0.0105	---	0.0105
Neptune Scrubber	0.000175	0.000819	0.000819
North Torit BH	0.00141	---	0.00141
South Torit BH	0.0036	---	0.0036
MAC BH	0.000572	---	0.000572
<b>All Devices at Exide</b>			<b>0.02106</b>

Since the source testing conducted in 2010 and 2012, additional controls have been installed at Exide, including the modification/ installation of HEPA filtration on the control systems serving two furnace feed room areas. To ensure compliance with Rule 1420.1 emission limits and implementation of their Rule 1402 Risk Reduction Plan, Exide is in the process of installing a series of air pollution controls, including: a new scrubber on the blast furnace air pollution control system; a repurposed baghouse and a new regenerative thermal oxidizer on the blast furnace charging enclosure; a new regenerative thermal oxidizer to be placed on the reverberatory furnace feed dryer stack; replacement of the reverberatory feed mechanism;

enclosure of the blast furnace charge area; installation of charge level and temperature sensors in the blast furnace; changes to hoods and ducting; and installation of a secondary HEPA filtration system downstream of the hard lead ventilation system baghouse and MAC feed room baghouse. The added pollution control equipment is intended to reduce arsenic, benzene and 1,3 butadiene emission but will also further reduce lead emissions. The proposed lead point source emission rate limit will codify the reductions that are known to be feasible. The extent of the further reductions will not be known until source tests are conducted to confirm the actual lead point source emission rates.

### **Regulatory Approach**

PAR 1420.1 incorporates a holistic regulatory approach that addresses point and fugitive lead emissions, as well as other toxic air contaminants. PAR 1420.1 is lowering both the point source emission rate and the ambient lead concentration limit. Lowering the point source emission rate will reduce the ambient lead concentration. Lowering the ambient lead concentration limit will ensure point and fugitive sources are well controlled. Based on the level of controls that have been installed at both facilities, fugitive emissions contribute the majority of emissions that are captured at the ambient monitors for both facilities. Based on implementation of Rule 1420.1, staff has found that the best control of fugitive emissions is use of total enclosures and strict adherence to housekeeping and maintenance provisions. The best measure of the efficacy of these measures is the ambient monitors. Increasing the frequency of monitoring the ambient lead and arsenic concentration from one in three days to daily will provide even greater assurance that housekeeping and maintenance activities are being consistently implemented, and all lead emissions are well controlled. In addition, lowering the ambient concentration establishes a prescribed limit, but allows each facility to identify the appropriate mix of point and fugitive control strategies to achieve that limit.

Lowering the ambient concentration lead limit to  $0.100 \mu\text{g}/\text{m}^3$  combined with daily monitoring will ensure that lead emissions from all sources, point and fugitive sources, are well controlled. Rule 1420.1 requires that ambient monitors be placed where the maximum ground level concentration is expected and that samples are collected over a 24-hour period. As discussed above, PAR 1420.1 will increase the frequency of sampling to daily thereby providing continuous ambient lead and arsenic data.

Staff is not recommending, at this time, to reduce the lead point source emission limit to 0.003 lb/hour. The lead and arsenic pollution control strategy that is being implemented at Exide has the potential of meeting a low lead point source emission rate, but it is not certain that it can meet a lead point source emission limit of 0.003 lb/hour. As discussed above, the additional pollution controls that have been installed as part of Exide's Compliance Plan and the additional arsenic pollution controls that are in the process of being installed at Exide are expected to further reduce the overall lead emission rate. ~~After the pollution controls are installed and source testing is conducted, staff can evaluate the feasibility of further reducing the lead point source emission rate.~~

### **Compliance Plan (Subdivision (g))**

The threshold for the Compliance Plan submittal required in subdivision (g) will be reduced to reflect the proposed ambient lead concentration limits which drops to  $0.110 \mu\text{g}/\text{m}^3$  in January

2016 and of  $0.100 \mu\text{g}/\text{m}^3$  in January 2017. The effective date of the Compliance Plan will be the same as the effective date of the proposed reduction in the ambient lead concentration limit. This will require the facility with exceedances to identify additional measures to ensure the facility can meet the ambient lead concentration limit.

### **Housekeeping and Maintenance Requirements (Subdivision (h) and (i))**

The definition for Maintenance Activity is proposed to be amended to include soil disturbances during sampling and remediation or other activities where soil is moved, removed or stored. Several housekeeping and maintenance provisions included in dust mitigation plans, required by the rule when facilities initially exceed the ambient lead concentration limit, have been proposed for inclusion in the rule. They reflect best management practices intended to minimize fugitive emissions that occur on facility grounds. The following measures are proposed:

- All trash or debris outside of a total enclosure containing lead or arsenic shall be placed in covered refuse containers that are free of dust or liquid leaks. The cover shall remain in place at all times except when trash or debris is placed into or removed from the refuse containers. This provision applies only to trash or debris within the facility.
- Posting of signs indicating a facility-wide vehicle speed limit of five miles per hour.
- Outside work stoppage if instantaneous wind speeds exceed 20 miles per hour.
- Concrete or asphalt cutting conducted outside of a total enclosure shall be performed under 100 percent wet conditions where there is a continuous flow of water applied to the cutting activity
- Grading of soil shall be conducted only on soils sufficiently wet to prevent fugitive emissions.

The provisions are intended to address fugitive sources of lead and arsenic which are significant contributors to ambient concentrations. Soil disturbances from vehicle movement, construction, maintenance, and remediation activities are likely causes of spikes in ambient concentrations and the proposed provisions have been found to be effective in existing dust mitigation plans at the applicable sites.

### **Ambient Sampling (Subdivision (j))**

Rule 1420.1 paragraph (j)(2) currently requires that lead and arsenic samples be collected at least once every three calendar days and daily sampling for lead or arsenic only if there is an exceedance in the Rule 1420.1 ambient lead or arsenic concentration limits. PAR 1420.1 would require that 24-hour, midnight-to-midnight lead and arsenic samples be collected daily. This provision would be effective upon adoption of PAR 1420.1.

During the January 2014 rulemaking, staff expressed interest in continuous emission and ambient monitoring. The SCAQMD staff with, assistance from the large lead-acid battery recycling facilities, are implementing a demonstration program for continuous in-stack emissions monitoring and a continuous ambient monitor. Quemetco commented that they already are collecting daily samples and do not object to the idea of daily monitoring. In addition, Exide had also commented that they are collecting daily samples on some monitors.

During the Working Group meeting, representatives from both affected facilities suggested a provision to cover a monitor malfunction. In response, PAR 1420.1 subparagraph (j)(2)(C),

includes a provision to address monitor malfunction such as equipment failure, vandalism, lightning strikes or other events beyond the facility's control. Since Rule 1420.1 paragraph (j)(7) requires that all ambient air quality monitoring systems be equipped with a backup, uninterruptible power supply to ensure continuous operation of the monitoring system during a power outage, loss of power to an ambient monitor is not considered a "monitor malfunction." Under PAR 1420.1, in the event a 24-hour, midnight-to-midnight sample was not collected due to a monitor malfunction or other occurrence beyond the control of the facility, the owner or operator must report the monitor failure by calling 1-800-CUT-SMOG within 2 hours of knowing that the 24-hour midnight-to-midnight sample was not collected. The operator is also required to provide the reason, the name of the monitor and the date of the occurrence. The operator shall submit a 24-hour midnight to midnight sample for the following day as sampling cannot be missed for more than one day over a consecutive 30-day period.

PAR 1420.1 includes provisions for retaining ambient daily samples for one year and providing the samples to the Executive Officer within one business day upon request.

Rule 1420.1 paragraphs (j)(9) and (j)(10) currently require daily sampling if there is an exceedance of the lead or arsenic ambient concentration, respectively. PAR 1420.1 would remove these paragraphs, since paragraph (j)(2) proposes to require daily sampling on an ongoing basis.

#### **Source Tests (Subdivision (k))**

Rule 1420.1 paragraph (k)(1) allows facilities that demonstrate a lead point source emission rate of 0.0025 lb/hr or less to conduct source testing every 24 months rather than annually. The rate was based on an overall facility point source rate of 0.045 lb/hr. The overall facility rate is proposed to be reduced by 50 percent as noted in the Lead Point Source Emission Rate discussion above. Thus the source test provision will be reduced by the same proportion, or 0.0012 lb/hr. This is projected to require one additional stack at Exide to test annually rather than every 24 months.

Currently under paragraph (k)(9), any changes for an alternative or equivalent source test method must be approved by the SCAQMD Executive Officer as well as the California Air Resources Board (CARB) and U.S. EPA, as applicable. Staff is proposing that the approval beyond the SCAQMD Executive Officer be limited to the agency that developed the test method in question. For example, if an equivalent procedure was sought for EPA Method TO-15, then only SCAQMD and U.S. EPA approval would be necessary. If the South Coast Air Basin has failed to attain the NAAQS for lead by the time required by the Clean Air Act, the alternative or equivalent source test method must be approved by U.S. EPA.

PAR 1420.1 (k)(15), requires that the reports from source testing conducted pursuant to the rule to be submitted to the SCAQMD within 90 days or less after the completion of the source testing.

#### **Reporting and Notification (Subdivision (n))**

Based on comments from the Rule 1420.1 Working Group, Proposed Amended Rule 1420.1 will also include a provision requiring large lead-acid battery recycling facilities to provide specific

information if there is a spike in the daily ambient lead concentration. Under PAR 1420.1, if any daily ambient lead sample is greater than  $0.300 \mu\text{g}/\text{m}^3$ , large lead-acid battery recycling facilities would be required to notify the Executive Officer in writing within 72 hours of when the facility was informed via laboratory report or other written or verbal communication that the ambient air concentration of lead was greater  $0.300 \mu\text{g}/\text{m}^3$  for any 24-hour sample. The operator is required to provide the date of the occurrence, the name of the monitor, the ambient lead concentration for the 24-hour sample, the potential cause or causes of the occurrence, and potential remedies to prevent the reoccurrence. The reports are not intended to be a full investigation but to provide facilities and the SCAQMD staff with general information on spike prevention.

Under PAR 1420.1, paragraph (n)(1), caution signs shall be posted at all entrances and the perimeter of the facilities stating, "Caution, Lead-Acid Battery Recycling Facility, Call Before Digging, Facility Contact." The proposed amended rule specifies the location to post these signs, the size of the sign, and specific lettering requirements. The purpose of this provision is to give the facility the opportunity to be notified of any pavement or soil work that may be occurring outside of their facility.

The notification provision for unplanned shutdowns is revised to require notification regardless of potential emissions. The provision now applies even when the unplanned shutdown will not result in lead emissions and supersedes previous interpretations.

Under PAR 1420.1 subparagraph (n)(2)(J), notifications are proposed for planned or unplanned breaches to total enclosures. Planned openings require notice to the Executive Officer at least ten calendar days prior while unplanned openings require notification within one hour afterwards. The notice shall include the date and time of the breach, an explanation of why it occurred, the duration or estimated duration of the event and facility contact information.

#### **Curtailment Requirements (Subdivision (o))**

Under the current provisions of Rule 1420.1, sources are required to curtail their process if they exceed either the ambient lead concentration limit or the total facility mass emission rate. The rate of curtailment is dependent on the level of exceedance with the first tier coinciding with the respective limits in the rule as found in Tables 1 and 2 of Rule 1420.1. Thus, effective January 1, 2016, the first tier of the monitored ambient air concentration rate for mandatory daily process curtailments in Table 1 of subparagraph (p)(1) will be reduced to coincide with the proposed limit for ambient air concentrations of lead,  $0.110 \mu\text{g}/\text{m}^3$ , as specified in paragraph (d)(1). The timeframe for the duration of the curtailment would also be amended to reflect the proposed ambient air concentration limit. Similarly, staff is proposing to reduce the first tier of the total facility mass emission rate for process curtailments in Table 2 of subparagraph (p)(2) to coincide with the proposed reduction of total facility lead point sources emission rate under subparagraph (f)(1)(A) from 0.045 lb/hour to 0.023 lb/hour.

### **ASSESSMENT OF LOWERING THE LEAD AMBIENT CONCENTRATION**

Under Rule 1420.1, large lead-acid battery recycling facilities are required to have fence line monitors. Quemetco has four fence line monitors as seen in Figure 2A while Exide has six fence line monitors as depicted in Figure 2B. The monitors are placed upwind and downwind of the

facilities at locations where maximum ground level concentrations are expected at or beyond the property line.

**Figure 2A – Quemetco Fence Line Monitors**

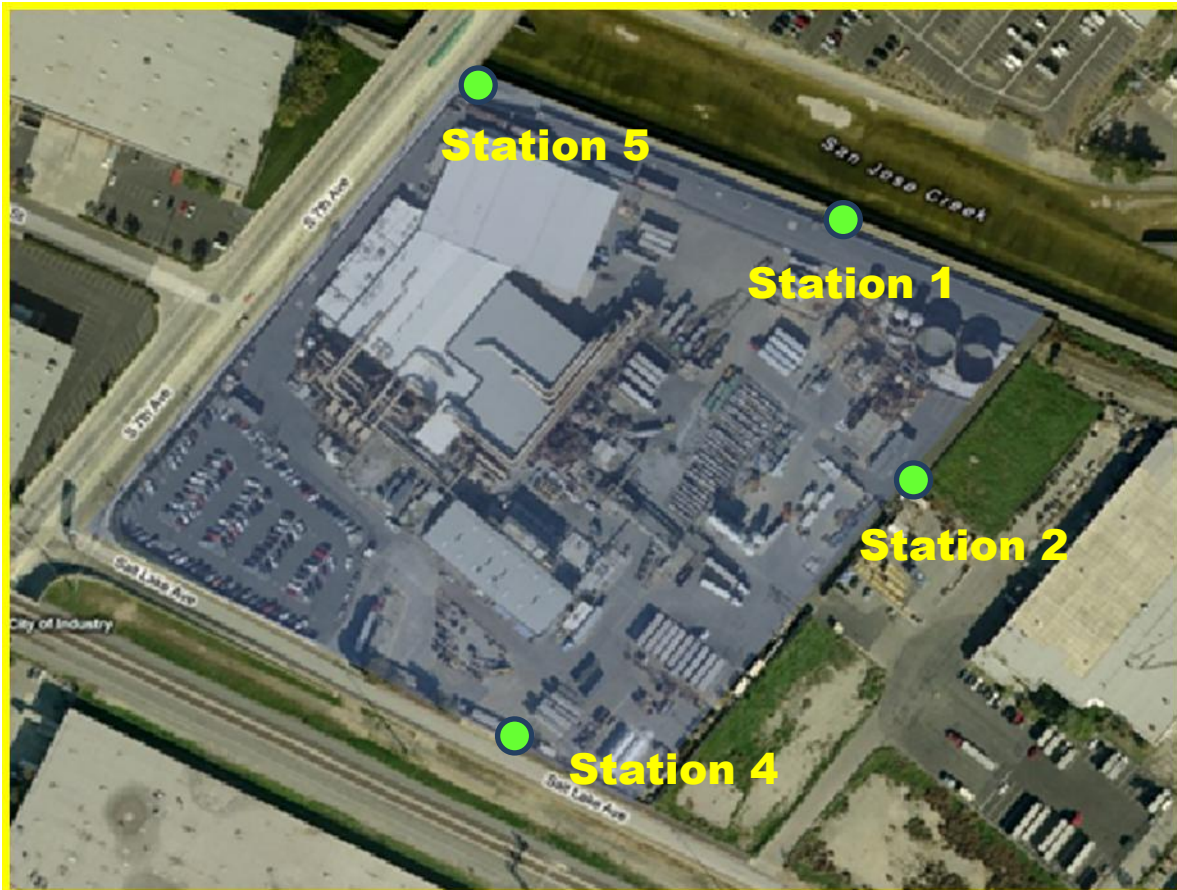
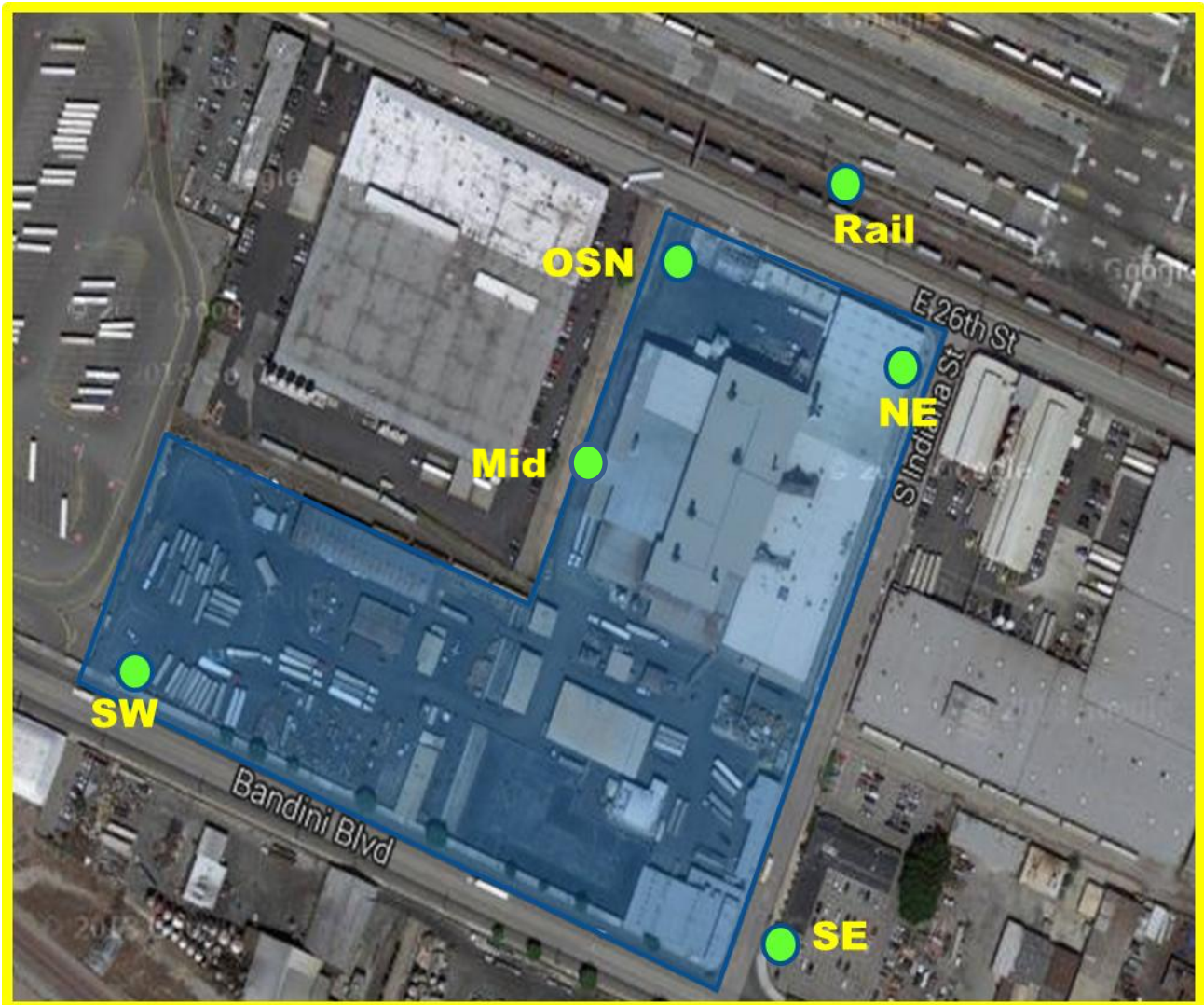




Figure 2B – Exide Fence Line Monitors



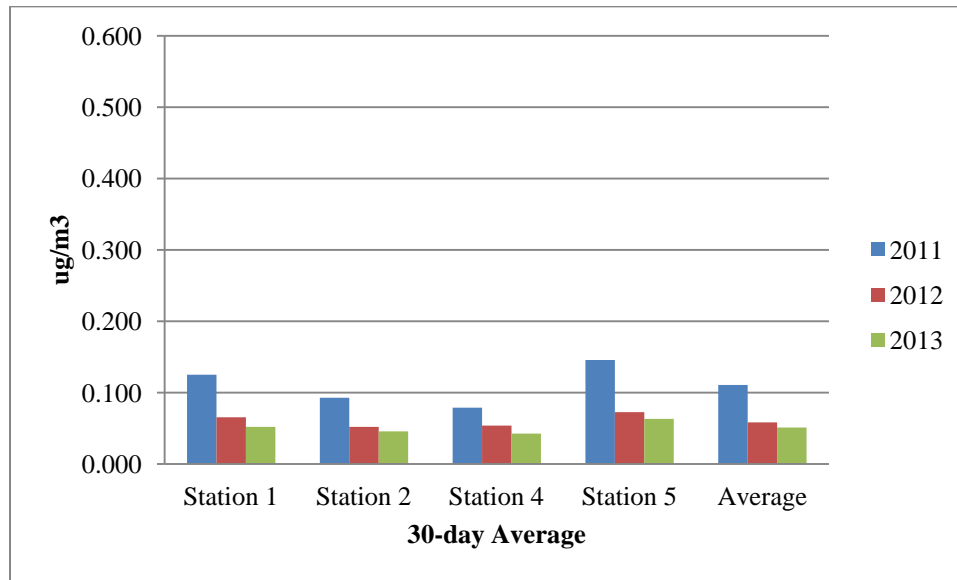
Staff evaluated the historical daily and the rolling 30-day average results for all monitors at both applicable facilities from 2008 until present to determine an appropriate lead ambient concentration limit and assess the feasibility of lowering the ambient lead concentration limit. The rolling 30-day average is calculated by determining the average over the 30 days prior to that particular day. Currently, in most 30-day averages, there would be ten data points that would be averaged assuming that samples were collected 1 in three days. The daily sampling under Proposed Amended Rule 1420.1 would yield 30 data points over the 30-day average. As noted in Figures 1A and 1B above, there have been significant decreases, notably after the January 2012 effective date of the current Rule 1420.1.

Based on analysis of historical lead monitoring data at PAR 1420.1 facilities, both facilities have demonstrated that it is feasible, if large spikes ( $> 0.300 \mu\text{g}/\text{m}^3$ ) can be avoided, to consistently achieve the proposed ambient air concentration standard of  $0.110 \mu\text{g}/\text{m}^3$  averaged over any 30 consecutive days. Better implementation of housekeeping provisions, both existing and

proposed, particularly in situations where there is a greater opportunity for fugitive emissions such as construction activities and soil disturbances, will minimize spike generation and avoid exceedances.

For most of the monitors at Quemetco, there has been more than a 50% decrease in the ambient monitor results over the three year period of 2011 through 2013 as shown in Figure 3 below.

**Figure 3 – Quemetco Ambient Lead Concentration (30-day Averages)**



Examination of ambient lead concentrations in 2012 and 2013 indicate Quemetco complies with current ambient lead concentration limit of  $0.150 \mu\text{g}/\text{m}^3$ . Furthermore, Quemetco had no exceedances of the proposed ambient lead concentration limit of  $0.110 \mu\text{g}/\text{m}^3$  in 2013. There were nine days at the Station 5 monitoring site that would not have met the proposed limit of  $0.100 \mu\text{g}/\text{m}^3$  in 2013 as seen below in Table 3.

**Table 3 - Quemetco 2013 30-Day Average, Number of Days Above the Proposed Ambient Lead Limits**

Site Monitor	Station 1	Station 2	Station 4	Station 5
Days Exceeding $0.150 \mu\text{g}/\text{m}^3$	0	0	0	0
Days Exceeding $0.110 \mu\text{g}/\text{m}^3$	0	0	0	0
Days Exceeding $0.100 \mu\text{g}/\text{m}^3$	0	0	0	9

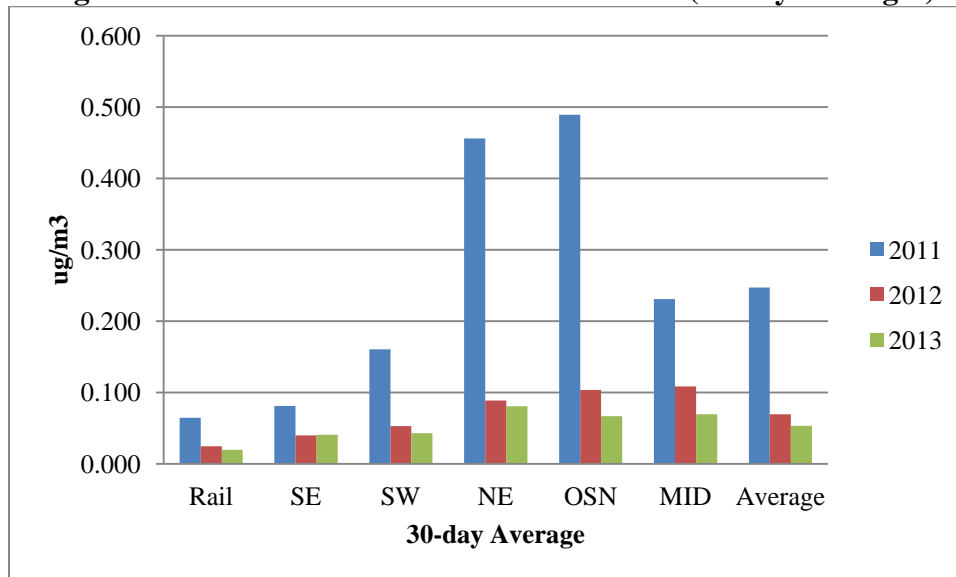
If large spikes greater than  $0.300 \mu\text{g}/\text{m}^3$  were avoided, Quemetco would have met the proposed limit of  $0.100 \mu\text{g}/\text{m}^3$  on all but three days over all four monitors in 2013 as seen below in Table 4. The three days occurred because of several spikes that were less than  $0.300 \mu\text{g}/\text{m}^3$  but more than  $0.200 \mu\text{g}/\text{m}^3$ . If any one of those values were to have impacted by increased vigilance for spike abatement, then based on the 2013 monitored data there would be no values over the proposed  $0.100 \mu\text{g}/\text{m}^3$  ambient lead limit.



**Table 4 - Quemetco 2013 30-Day Average, Number of Days Above the Proposed Ambient Lead Limits – Reduced Spikes Above 0.300  $\mu\text{g}/\text{m}^3$** 

Site Monitor	Station 1	Station 2	Station 4	Station 5
Days Exceeding 0.150 $\mu\text{g}/\text{m}^3$	0	0	0	0
Days Exceeding 0.110 $\mu\text{g}/\text{m}^3$	0	0	0	0
Days Exceeding 0.100 $\mu\text{g}/\text{m}^3$	0	0	0	3

Similar analysis was conducted on the monitor results at Exide. In Figure 4 below, the average of the 30-day average ambient lead concentration results at the various Exide monitors are presented. The average decrease across all monitors at Exide was nearly 80% over the three year period. Monitoring data in late 2013 and onward at Exide was not included as there was soil excavation required by DTSC and Exide has halted production in 2014 while installing additional control equipment.

**Figure 4 – Exide Ambient Lead Concentration (30-day Averages)**

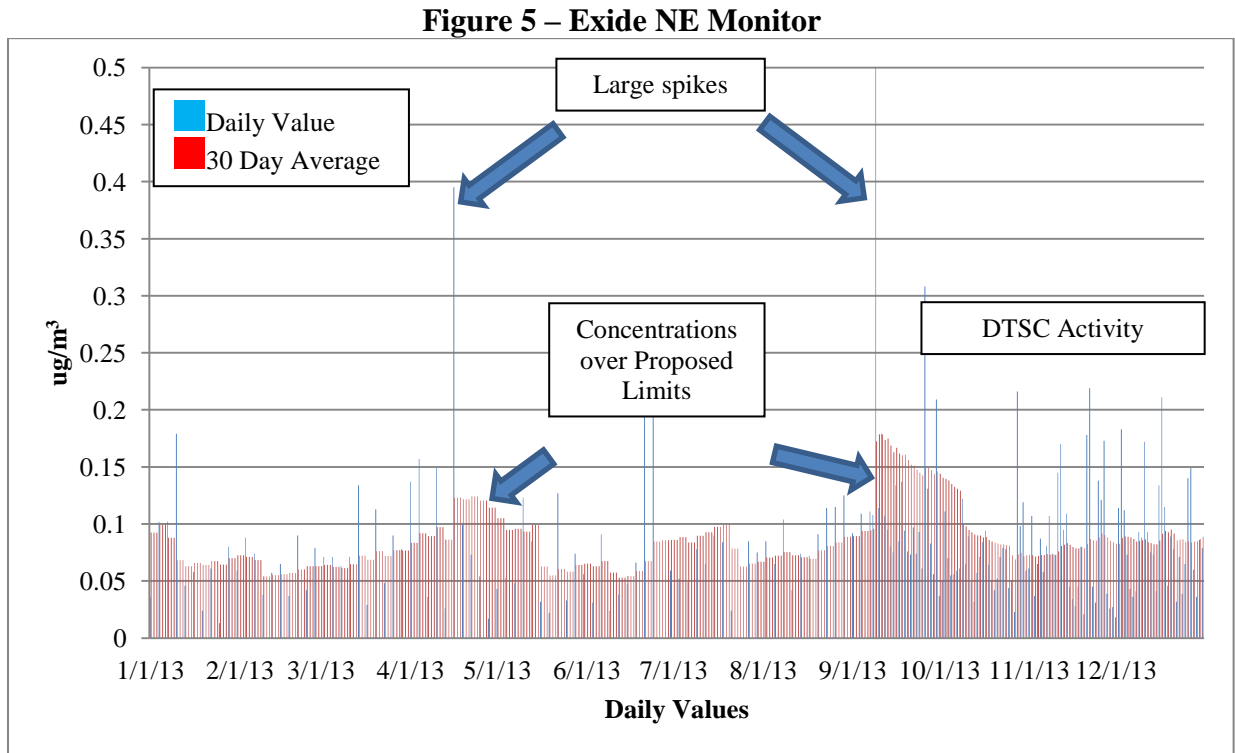
Exide had eight exceedances of the 0.150  $\mu\text{g}/\text{m}^3$  ambient lead concentration limit in 2013 as seen in Table 5 below. Exide would have exceeded the proposed 0.110  $\mu\text{g}/\text{m}^3$  limit on 23 days at the NE monitor and 9 days at the OSN monitor. Furthermore, Exide would have exceeded the proposed 0.100  $\mu\text{g}/\text{m}^3$  limit on 26 days at the NE monitor, 15 days at the OSN monitor and 10 days at the MID monitor

**Table 5 - Exide 2013<sup>1</sup> 30-Day Average, Number of Days Above the Proposed Ambient Lead Limits**

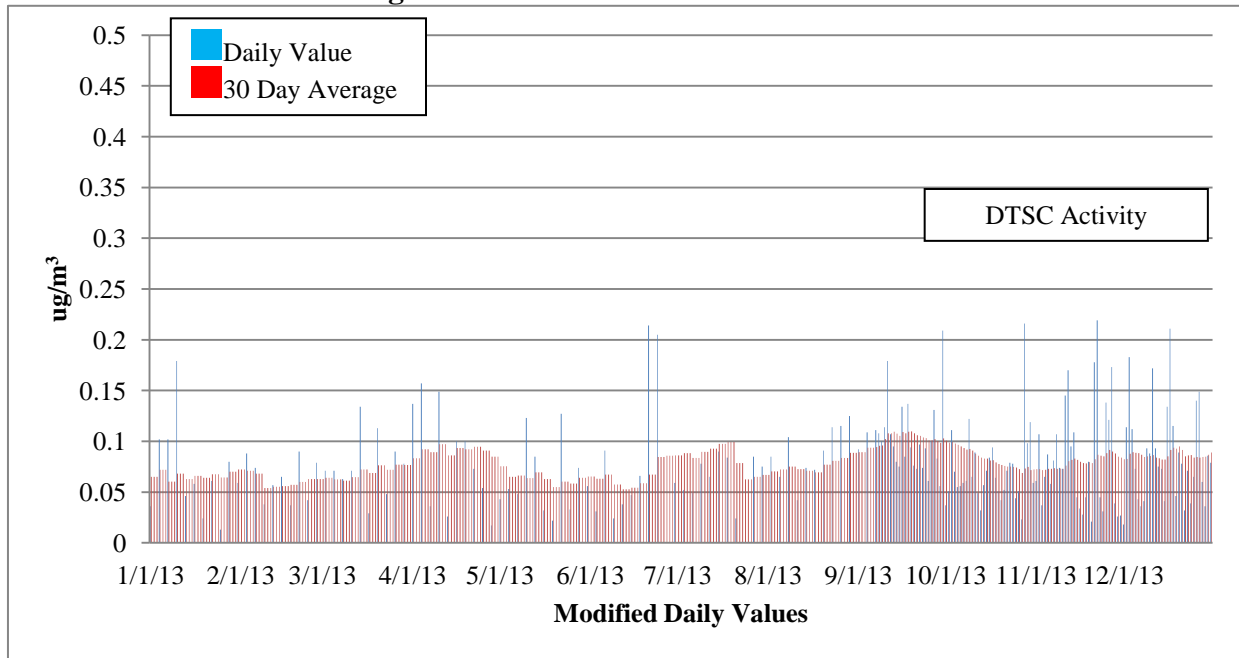
Site Monitor	Rail	SE	SW	NE	OSN	MID
Days Exceeding 0.150 $\mu\text{g}/\text{m}^3$	0	0	0	8	0	0
Days Exceeding 0.110 $\mu\text{g}/\text{m}^3$	0	0	0	23	9	0
Days Exceeding 0.100 $\mu\text{g}/\text{m}^3$	0	0	0	26	15	10

1. Excludes 9/16/13 through 12/31/13 due to DTSC activity

Figure 5 below shows daily monitored values in blue and the 30-day average in red. Examination of Exide's 2013 monitoring data reveals that the ambient lead concentrations over the current limit and proposed limits of  $0.110 \mu\text{g}/\text{m}^3$  and  $0.100 \mu\text{g}/\text{m}^3$  can be attributed to two large ( $>0.300 \mu\text{g}/\text{m}^3$ ) spikes. There was a third spike that was  $>0.300 \mu\text{g}/\text{m}^3$ , however it occurred during the period that Exide was conducting DTSC related soil excavation activities. Aside from the days immediately following the spikes, the 30-day averages are all below the proposed limits.



If the two spikes are reduced to the annual average value, there would be no exceedances of either the current or proposed  $0.110 \mu\text{g}/\text{m}^3$  ambient lead concentration limit. Aside from the two spikes, all other monitor values remain unchanged, including those that are well above the proposed limit, as seen in Figure 6 below. The proposed limit of  $0.100 \mu\text{g}/\text{m}^3$  would have been exceeded on seven days at the NE monitor in that same time period.

**Figure 6 – Modified Exide NE Monitor**

A similar analysis on spikes done on the other Exide monitors, as presented below in Table 6, indicates nine days of exceedances over the proposed limit of  $0.110 \mu\text{g}/\text{m}^3$  occurred in 2013, excluding 9/16/13 through 12/31/13 when DTSC activity was taking place. Additionally, all exceedances of the proposed limit at the OSN monitor occur beginning the same date (9/6/13) as the second spike seen on Figure 5. The exceedances noted at the MID, OSN and NE monitors at Exide all occur during the same timeframe where initial DTSC work, including trenching within the facility, was commencing. This correlation between spikes and exceedances suggests that the proposed limit of  $0.110 \mu\text{g}/\text{m}^3$  can be met by avoiding large spikes and implementing measures specified in Table 7.

**Table 6 - Exide 30-Day Average, Number of Days Above the Proposed Ambient Lead Limits – Reduced Spikes Above  $0.300 \mu\text{g}/\text{m}^3$**

Site Monitor	Rail	SE	SW	NE	OSN	MID
Days Exceeding $0.150 \mu\text{g}/\text{m}^3$	0	0	0	0	0	0
Days Exceeding $0.110 \mu\text{g}/\text{m}^3$	0	0	0	0	9	0
Days Exceeding $0.100 \mu\text{g}/\text{m}^3$	0	0	0	7	15	10

#### **Achieving the $0.100 \mu\text{g}/\text{m}^3$ Ambient Lead Concentration Limit**

Staff evaluated the measures in Table 7 that could be implemented at both facilities to ensure they meet the  $0.100 \mu\text{g}/\text{m}^3$ .

**Table 7 – Measures to Reduce Lead Emissions**

Measures to Reduce Lead Emissions	Description/Frequency	Action To Be Taken By:	
		Exide	Quemetco
Enhanced Measures During Maintenance Activities	<ul style="list-style-type: none"> <li>• During maintenance activities such as concrete/asphalt cutting, drilling, or soil grading, increase wash down areas as well as dusting, vacuuming and sweeping to minimize dust</li> <li>• 4 additional workers; 4 times/year</li> </ul>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Enhanced Housekeeping Measures (beyond the new proposed housekeeping requirement of PAR 1420.1 (h))	<ul style="list-style-type: none"> <li>• Implement existing housekeeping provisions more frequently or with better efficacy such as watering and street sweep to minimize dust created by vehicle and foot traffic</li> <li>• Wash, vacuum, and sweep inside and outside of building and parking area</li> <li>• 24 additional workers to implement enhanced daily housekeeping</li> </ul>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Enhancements to Total Enclosures	<ul style="list-style-type: none"> <li>• Seal roof on total enclosure</li> <li>• Install 8 - vestibules to improve maintenance of negative air pressure for doors and other openings, and</li> <li>• Install 8 - air curtains to improve maintenance of negative air pressure for loading and unloading areas and other openings where vestibules are not practicable</li> </ul>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Additional Wheel Washing Station	1 additional station to water down vehicle wheels before exiting site/	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Increased Maintenance of Baghouses	Increase frequency of baghouses maintenance activities	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Additional Air Pollution Control (Point Source)	New two-cell WESP or additional scrubber	<input checked="" type="checkbox"/>	<input type="checkbox"/>

It is expected that Exide and Quemetco will likely implement measures to eliminate spikes that could occur during specific maintenance activities. This is expected to bring both facilities in compliance with 0.110  $\mu\text{g}/\text{m}^3$  proposed limit and to bring Quemetco into compliance with the 0.100  $\mu\text{g}/\text{m}^3$  proposed limit as their increased vigilance on spike control will also limit smaller spikes from occurring. All other measures in Table 7 such as enhanced housekeeping, enhancements to the total enclosure, an additional wheel washing station, increased maintenance of baghouses, and installation of either a scrubber or 2-cell WESP on the feed dryer could be implemented by Exide to ensure the facility can consistently meet the lower ambient lead concentration limit of 0.100  $\mu\text{g}/\text{m}^3$ . The improvements were identified by staff based on review of source tests and ambient monitoring data, comparing housekeeping practices before and after 2013, and comparing practices between the two impacted facilities. As part of the enhanced

housekeeping provisions, the SCAQMD staff believes that increasing the number of workers to implement these provisions at Exide will improve the efficacy of implementing these measures. It is the SCAQMD staff's observation that the other large lead-acid battery recycling facility generally uses more workers when conducting daily housekeeping measures.

In addition, many of the improved measures are based on the respective facilities' Rule 1420.1 Compliance Plan and dust mitigation measures. With the exception of baghouse maintenance and potentially installing additional control equipment, the improvements focus on reducing fugitive emissions. Improved baghouse maintenance such as more frequent inspection and replacement of PTFE (Polytetrafluoroethylene) bags would help prevent equipment failures and ensures the baghouse is operating properly. Finally, the additional air pollution control would likely be on the Feed Dryer and addresses the highest emitting point source at Exide, according to 2012 source test data. Based on the 2012 source test the feed dryer was approximately three times higher than the next highest lead emission point source. Since the 2012 source test, Exide has installed HEPA on the feed dryer which would reduce the lead emission rate. However, it is expected that the lead emission rate from the feed dryer would still be about two times higher than the next highest lead emission point source. Thus, it is reasonably foreseeable that Exide would likely further control the feed dryer to ensure compliance with the ambient lead concentration limit under PAR 1420.1. Based on review of 2013 ambient lead monitored data combined strict adherence with point source emission limit, housekeeping and maintenance provisions, and implementation of some or all of the enhanced measures discussed above, the SCAQMD staff believes both facilities can meet the lower ambient lead concentration limit of  $0.100 \mu\text{g}/\text{m}^3$ . The exceedances noted at the MID, OSN and NE monitors at Exide all occur during the same timeframe where initial DTSC work, including trenching within the facility, was commencing.

## COMMENTS AND RESPONSES

**Comment 1:** Given Exide’s investment in control equipment to comply with the existing provisions of Rule 1420.1, it is critically important that any District proposed amendments reflect realistic and achievable limits with a reasonable buffer.

**Response:** SCAQMD acknowledges Exide’s efforts to comply with the existing provisions in Rule 1420.1. Based on source tests in 2010 and 2012 and the additional pollution controls that have been and are in the process of being installed, the SCAQMD staff is confident that Exide can meet the proposed overall lead emission rate of 0.023 lb/hour. Regarding the lower ambient lead concentration limit of 0.100  $\mu\text{g}/\text{m}^3$ , based on the 2013 ambient monitored data Exide can achieve this lower ambient concentration limit with some improvements in their point source air pollution controls and housekeeping and maintenance activities.

**Comment 2:** The control equipment being installed at Exide is designed to satisfy the January 2014 amendments to Rule 1420.1 (“negative pressure” and limits on benzene, arsenic and 1,3 butadiene) and to satisfy Rule 1402. Though additional lead reductions are reasonably expected, the actual amount of reduction is unknown until after their implementation. Exide hopes that it can achieve the proposed lead mass emission rate of 0.023 pounds per hour, but the rate should be established at 0.036 lb/hr to provide an adequate “buffer”.

**Response:** Based on earlier source testing conducted in 2010 and 2012 for approved AB2588 Health Risk Assessments, the combined lead point source emissions at Exide were under the proposed lead mass emission limit of 0.023 pound per hour. Since the 2012 source test, Exide has installed a HEPA filter on their feed dryer. In addition, Exide is installing a scrubber on their furnace and high efficiency particulate arrestors on several baghouses that will further reduce the lead emission rate as part of their risk reduction projects. The proposed amendment will codify the emission reductions achieved in practice.

**Comment 3:** Exide appreciates the District’s rationale for not lowering the mass emission rate to 0.003 lb/hr, as sought by Quemetco. Exide must be given a chance to implement its District-approved project.

**Response:** At the January 9, 2015 Governing Board meeting, staff presented the approach for PAR 1420.1 which will lower the lead point source emission rate to 0.023 lb/hour and also lower the ambient lead concentration limit to 0.110  $\mu\text{g}/\text{m}^3$  effective January 1, 2016, and then to 0.100  $\mu\text{g}/\text{m}^3$  effective January 1, 2017. The Board has also asked that in the adoption resolution for PAR 1420.1 that staff include a commitment to return to the Governing Board with a rule proposal in six months to lower the point source lead emission rate to 0.003 lb/hr and other options regarding the feasibility of lowering the point source lead emission rate beyond those in PAR 1420.1. Allowing Exide to complete emission reduction projects and source test will provide a more accurate representation of point

~~source emissions at Exide and the feasibility and potential for further lead emission reductions from point sources.~~

**Comment 4:** There is inherent variability in ambient data, and it cannot be assumed that any daily result above  $0.150 \mu\text{g}/\text{m}^3$  is either: (1) problematic, or (2) the result of an assignable and correctable site-related cause. The District should consider keeping the existing standard while adding a second compliance standard of  $0.12 \mu\text{g}/\text{m}^3$  measured over a longer averaging period of 60 to 90 days to account for the variability.

**Response:** Staff analysis of ambient monitor results during 2013 found that if daily ambient readings greater than  $0.300 \mu\text{g}/\text{m}^3$  are eliminated, an ambient air concentration lead limit to  $0.110 \mu\text{g}/\text{m}^3$  averaged over a 30-day period is feasible. Based on 2013 ambient lead data, spikes over  $0.300 \mu\text{g}/\text{m}^3$  are infrequent, occurring just 0.2% of the time, and strongly correlate to exceedances of both the proposed limit and the existing limit. Staff agrees that a daily value above  $0.150 \mu\text{g}/\text{m}^3$  is not uncommon and does occur. However, over a 30 day averaging period a daily value of  $0.150 \mu\text{g}/\text{m}^3$  did not lead to any exceedances of the current limit and would not lead to any exceedances of the proposed limit as most daily values are well below  $0.100 \mu\text{g}/\text{m}^3$ . Additionally, the exceedances noted at the MID, OSN and NE monitors at Exide all occur during the same timeframe where initial DTSC work, including trenching within the facility, was commencing. Enhance measures during maintenance activities would likely address spikes occurring because of remediation activities.

A daily spike or series of spikes over  $0.300 \mu\text{g}/\text{m}^3$  are problematic and PAR 1420.1 requires notification and that the facility identify recommendations for potential remedies when they occur. As the primary indicator of health impacts to the surrounding community, staff believes that reducing the ambient concentration limit to the lowest feasible limit is a priority. Furthermore, in practice, shorter averaging periods is more stringent and will result in lowering average monitored values. This more stringent averaging methodology is more health protective. The proposed amended rule will require daily monitoring, which will provide more data points within the 30 day average which should help to account for variability.

**Comment 5:** We do not oppose daily sampling but request similar data completeness requirements and implementation concepts for federal lead NAAQS monitoring at 40 CFR 50, Appendix R, Section 4(c)(i) which could be adapted to a daily sampling program.

**Response:** Staff has included monitor failure provisions in the proposed rule as requested. The daily sampling, data completeness requirements are similar to those in 40 CFR 50, Appendix R. With respect to missing daily samples, the proposed rule allows up to one missing daily sample over a consecutive 30 day period provided

the missing sample was due to monitor malfunction or other occurrence beyond the control of the facility.

**Comment 6:** The compliance date for the new lead mass emission and ambient standards should be extended 90 days from January 1, 2016 to April 1, 2016 to accommodate completion of installing control equipment, commissioning and testing.

**Response:** Staff has already proposed extending the compliance dates from July 1, 2015 to January 1, 2016 to accommodate the completion of the RRP Projects and subsequent source testing at Exide. RRP Projects completion is scheduled for Spring 2015 allowing ample time for troubleshooting and source testing the newly installed equipment. The facility will have approximately nine months to make adjustments as systems go online and testing should take no more than three months.

**Comment 7:** As the District has acknowledged, ambient emissions are more reflective of health protection and exposure risks than stack emissions. Ambient lead concentrations are driven more by fugitive sources than point sources. Over time Exide's ambient lead levels are comparable to Quemetco's ambient lead levels, even though Quemetco has lower measured mass emissions.

**Response:** Staff agrees that ambient lead concentration limits are more reflective of health protection and exposure risks. Stack emissions are a contributing source to ambient lead concentrations as are fugitive emissions and lead-contaminated surface dust and soil. Staff is proposing to limit all three contributing sources with the primary aim of reducing the ambient lead concentration to the lowest feasible limit.

**Comment 8:** Exide conducted a detailed Feasibility Study concluding that the 0.003 lb/hr mass emission limit was infeasible. Multiple control technologies were carefully assessed, including wet electrostatic precipitators. Exide was not able to find an emissions control equipment vendor that would guarantee the 0.003 lb/hr emission rate on a facility-wide basis. Exide's physical space constraints are such that there is no suitable space for a wet electrostatic precipitator. Finally, the \$30 million cost to implement the control technologies would potentially provide only a marginal, if any, benefit on emissions reductions.

**Response:** Thank you for summarizing the Feasibility Study you provided regarding the 0.003 pound per hour mass emission limit. Staff found the infeasibility assertion to be more nuanced than stated in the study or the comment above. It is the SCAQMD staff's understanding that the vendor of the WESP was willing to guarantee an emission reduction efficiency of 92%, provided the Feed Dryer lead emissions were reduced by half. This, combined with improvements to the general ventilation control system could potentially reduce overall lead emissions



to a level near 0.003 pounds per hour. In addition, the SCAQMD staff believes that one option to install a WESP would be over the surface pond.

The SCAQMD staff is aware, however, that Exide has chosen a control strategy to reduce lead and arsenic emissions that does not include installing a WESP. Exide's control strategy does include secondary, tertiary and quaternary pollution controls, depending on the stack. As previously stated, at the January 9, 2015 Governing Board meeting, staff presented the approach for PAR 1420.1 which will lower the lead point source emission rate to 0.023 lb/hour and also lower the ambient lead concentration limit to 0.110  $\mu\text{g}/\text{m}^3$  effective January 1, 2016, and then to 0.100  $\mu\text{g}/\text{m}^3$  effective January 1, 2017. The Board also asked ~~that in the adoption resolution for PAR 1420.1 that staff include a commitment to return to the Governing Board with a rule proposal in six months to lower the point source lead emission rate to 0.003 lb/hr and other options regarding the feasibility of lowering the point source lead emission rate. Allowing Exide to complete emission reduction projects and source test will provide a more accurate representation of point source emissions at Exide and the feasibility and potential for further lead emission reductions from point sources.~~

**Comment 9:** Quemetco supports the adoption of the 0.110  $\mu\text{g}/\text{m}^3$  ambient lead concentration as proposed by SCAQMD.

**Response:** Thank you for your comment.

**Comment 10:** Quemetco urges SCAQMD to adopt a facility-wide lead mass emission rate limit of 0.003 pounds per hour. While the proposed limit of 0.023 pounds per hour appears significant, further examination reveals it to be far more modest. The District's proposed point source emission standard will result in no meaningful reduction of lead in the greater Los Angeles area. Quemetco's proposal, however, will reduce lead point source emissions to 25 pound per year, nearly ten times less than what is proposed.

**Response:** At the January 9, 2015 Governing Board meeting, staff presented the approach for PAR 1420.1 which will lower the lead point source emission rate to 0.023 lb/hour and also lower the ambient lead concentration limit to 0.110  $\mu\text{g}/\text{m}^3$  effective January 1, 2016, and then to 0.100  $\mu\text{g}/\text{m}^3$  effective January 1, 2017. The Board also asked ~~that in the adoption resolution for PAR 1420.1 that staff include a commitment to return to the Governing Board in six months with a proposal to lower the overall point source lead emission limit to 0.003 lb/hour and other options regarding the feasibility of lowering the point source lead emission rate. Allowing Exide to complete emission reduction projects and source test will provide a more accurate representation of point source emissions at Exide and the feasibility and potential for further lead emission reductions from point sources.~~

Based on source tests, Quemetco has demonstrated a lead point source emission rate less than 0.003 pound per hour. The point sources represent only one aspect

of contributing emission sources. Ambient concentrations are the sum of point source and fugitive emissions ~~as well as contaminated surface dust and lead dust that is re-entrained into the ambient air.~~ The SCAQMD staff believes that lowering the ambient lead concentration limit will minimize all lead emissions from large lead-acid battery recycling facilities and is directly associated with protecting public health. In addition, ambient lead and arsenic concentrations are sampled over a 24-hour period and collected daily provided more continuous compliance information as opposed to point source limits which require a source test done on an annual basis.

**Comment 11:** Quemetco has six years of test data demonstrating that the Quemetco's wet electrostatic precipitator achieves its proposed 0.003 pound per hour lead emission rate.

**Response:** The wet electrostatic precipitator has been proven to be successful at Quemetco. Quemetco's operation is different than Exide's operation. Quemetco operates an electric resistance furnace while Exide operates a blast furnace. The configuration of the two facilities is also different and the engineering, design, and construction for the two facilities would also be different. Both facilities realize control efficiencies of 99% or greater. The variability in efficiencies between different equipment, different process weights and different pollutants makes determining an overall control efficiency problematic, particularly when the control equipment is in the midst of changes.

**Comment 12:** The lead emission rates established by Quemetco are both technologically feasible, as demonstrated through testing, and economically feasible. In short, Quemetco's lead emission rates represent Best Available Control Technology (BACT), Best Available Retrofit Control Technology (BARCT), Toxics Best Available Control Technology (TBACT) and Lowest Achievable Emission Rate (LAER).

**Response:** Again, while the wet electrostatic precipitator has been proven successful at Quemetco with their electric ~~are-resistance~~ furnace, it has not formally been demonstrated to be BACT, BARCT, TBACT and LAER. These designations require careful evaluation to determine the applicable scope and processes. ~~There may be limitations placed upon the designation including the specific type of equipment (i.e. electric are furnace). All of these limits (BACT, BARCT, etc.) are based on individual pieces of equipment, not an entire facility. Where two facilities have different types of equipment, they may legitimately produce different total point source emissions.~~

**Comment 13:** Quemetco requests that the Governing Board be presented the option to adopt a lead mass point source emission rate of 0.003 pounds per hour when it considers the currently proposed changes.

**Response:** At the January 9, 2015 Governing Board meeting, staff presented the approach for PAR 1420.1 which will lower the lead point source emission rate to 0.023 lb/hour and also lower the ambient lead concentration limit to 0.110  $\mu\text{g}/\text{m}^3$  effective January 1, 2016, and then to 0.100  $\mu\text{g}/\text{m}^3$  effective January 1, 2017. Staff did highlight Quemetco's proposal to lower the overall stack emission rate to 0.003 lb/hour. As a result, the Board asked that in the adoption resolution for PAR 1420.1 that staff include a commitment to return to the Governing Board ~~regarding the feasibility of in six months with a rule proposal~~ lowering the point source lead emission rate and other options. ~~SCAQMD staff believes that allowing Exide to complete emission reduction projects and source test will provide a more accurate representation of point source emissions at Exide and the feasibility and potential for further lead emission reductions from point sources.~~

**Comment 14:** It takes approximately three days for the lab to analyze an ambient sample, and, in the days before receiving a result, the facility has little ability to correct the problem or assess the event that may have resulted in what is later learned to be a high result. By the time the result is known, the facility may have already exceeded the 30-day average without a reasonable opportunity to assess the cause and take corrective action if needed.

**Response:** Ambient 24-hour sampling by definition only provides a result after the events of a day. Regardless of whether the results become known immediately afterwards or three days later, a high result may lead to several days of exceedances. It is incumbent upon the facility to prevent the exceedances by operating equipment properly and strict adherence to Rule 1420.1 operating, housekeeping, and maintenance provisions. It is expected that both facilities will implement additional measures to ensure compliance with the lower ambient concentration limit of 0.100  $\mu\text{g}/\text{m}^3$ . Review of the lead ambient concentration results between 2012 and 2013 demonstrate that over time both facilities are already assessing the cause of exceedances and taking corrective actions.

Under Rule 1420.1, both facilities are required to participate and fund an in-stack multi-metals continuous emissions monitoring demonstration program. In addition to this demonstration program, the SCAQMD has been also evaluating through a demonstration program an ambient multi-metals continuous monitoring system. If these systems are successful, they may provide more instantaneous continuous emissions and/or ambient air data.

**Comment 15:** There have been instances where third-parties not under Exide's control have caused or contributed to exceedances of the 30-day average. As such, Exide respectfully requests that language be included in the rule to allow the facility to seek a waiver to avoid a notice of violation and/or curtailment. The facility shall provide credible supporting evidence.

**Response:** There is no prohibition in the rule against requesting such a waiver and/or offering credible supporting evidence. Relief from the curtailment provisions

may be sought through a variance. Notices of Violations are simply allegations that the District believes a violation has occurred. Before the District obtains any penalties, it first needs to prove a violation. The specific amount of penalties paid in settlement or ordered by a court must be based on an analysis of the factors set forth in Health and Safety Code section 42403.

**Comment 16:** One IQ point, or 1  $\mu\text{g}/\text{dL}$  is established by state law. I don't see how allowing 200 pounds per year of lead emissions with the proposed limit of 0.023 pounds per hour from stack emissions will comply with state law.

**Response:** The California Office of Environmental Health Hazard Assessment (OEHHA) has developed a 1  $\mu\text{g}/\text{dL}$  benchmark for source-specific incremental change in blood levels for protection of children. The California Human Health Screening Levels (CHHSL) represent concentrations in soil that have no more than a 2.5% probability of decreasing IQ by more than 1 point in a 90th percentile child or fetus. The benchmark was established to estimate a concentration in soil that would lead to an incremental increase in blood lead of up to 1  $\mu\text{g}/\text{dL}$  to a child resident. Using DTSC's Leadsread model, OEHHA determined that a residential exposure to lead in soil or dust of 77  $\mu\text{g}/\text{g}$  would result in an incremental increase in blood lead to 1  $\mu\text{g}/\text{dL}$ . However, there is no established way to translate stack emissions at a point source directly to lead content in soil. Stack emissions are dispersed over an area in and around the facility in relatively small amounts. However, when allowed to accumulate over many years, as they clearly have in the two communities surrounding the Exide and Quemetco, the levels could exceed 77  $\mu\text{g}/\text{g}$ . The U.S. EPA examined similar thresholds when establishing the lead NAAQS. However, rather than using stack emission limits with its inherent limitations, U.S. EPA established a standard based on the ambient lead concentration. When reviewing the current federal standard, U.S. EPA reviewed the median IQ loss associate with lead exposure for the median child. Their estimations of risk are approximate as noted by the ranges presented below in Table 3-11 taken from the U.S. EPA's Policy Assessment for the Review of the Lead National Ambient Air Quality Standards, May 2014. The bolded range represents the range with the highest overall confidence. The current ambient concentration limit in Rule 1420.1 is a maximum monthly average of 0.150  $\mu\text{g}/\text{m}^3$  which, as seen below, is more health protective than the existing federal limit. The proposed maximum monthly average limits of 0.110  $\mu\text{g}/\text{m}^3$  and 0.100  $\mu\text{g}/\text{m}^3$  will be even more health protective but the uncertainties in the estimates prevent a determination if the proposed limit, or even the current limit, prevent the loss of one IQ point in a child resident. It should be noted that U.S. EPA and SCAQMD staff concur that ambient lead concentrations, and not total facility mass lead emissions are the primary indicator of health impacts to the surrounding community.

## U.S. EPA's Policy Assessment for the Review of the Lead National Ambient Air Quality Standards, May 2014

**Table 3-11. Estimates of air-related risk for the generalized (local) urban case study, including interpolated estimates for current standard.**

Air Quality Scenario Just meeting specified metric ( $\mu\text{g}/\text{m}^3$ )			Median Air-related IQ Loss <sup>A</sup> for Generalized (local) Urban Case Study
Maximum Quarterly Average <sup>D</sup>	Maximum Monthly Average	Maximum 3-month Average	
1.5 (previous NAAQS)			<b>3.5 - 4.8</b> (1.5 - 7.7)
	0.5		<b>1.9 - 3.6</b> (0.7 - 4.8)
0.2			<b>1.5 - 3.4</b> (0.5 - 4.3)
		0.15 <sup>B</sup> (current NAAQS)	<b>1.5 - 3.4</b> (0.5 - 4.3)
	0.2		<b>1.2 - 3.2</b> (0.4 - 4.0)
	0.05		<b>0.5 - 2.8</b> (0.2 - 3.3)
	0.02		<b>0.3 - 2.6</b> (0.1 - 3.1)

A - Air-related risk is bracketed by "recent air" (lower bound of presented range) and "recent" plus "past air" (upper bound of presented range) (see section 3.4.4 for additional detail on these categories). Boldface estimates are generated using the C-R function in which we have the highest overall confidence (the log-linear with low-exposure linearization). Values in parentheses reflect the range of estimates associated with all four concentration-response functions (see discussion in section 3.4.3.3.1). Values in parentheses reflect the range of estimates associated with all four concentration-response functions.

B - Risk estimates interpolated - see text.

## SOCIOECONOMIC ASSESSMENT

PAR 1420.1 would include revisions to the lead ambient air concentration limit, frequency of ambient lead samples, point source emission rates, compliance plan and curtailment thresholds, housekeeping and maintenance provisions, additional reporting requirements and other administrative changes.

### Affected Facilities and Industries

The proposed amendments affect two facilities that process greater than 50,000 tons of lead annually. These two facilities belong to the industry of secondary lead smelting, refining, and alloying of nonferrous metal [North American Industrial Classification System (NAICS) 331492].

## Compliance Costs

The proposed ambient air concentration limit of  $0.110 \mu\text{g}/\text{m}^3$  can be achieved by eliminating large spikes through improved implementation of housekeeping provisions and enhanced maintenance measures, particularly in situations where there is a greater opportunity for fugitive emissions such as construction activities and soil disturbances. On average, two to four spikes per year were observed over the past three years. Staff estimates that four additional workers will be necessary to implement the enhanced maintenance measures during certain soil disturbance activities at a cost of approximately \$3,200 per activity, assuming four additional employees working 40 hours each at \$20 per hour to limit the soil disturbances. Assuming four incidents per year at each facility, the annual additional cost for improved housekeeping implementation is \$25,600.

To comply with the proposed  $0.100 \mu\text{g}/\text{m}^3$  ambient lead concentration limit, it is estimated that Exide will need to implement enhanced housekeeping measures. Staff estimates that a crew of eight for each shift will be necessary to do additional sweeping, wash downs, baghouse maintenance and other dust abatement activities. This would result in an additional \$175,200 in annual housekeeping costs. Additionally, a second wheel washing station and enhancements to the total enclosures would also be necessary. The wheel washing station cost is estimated to be \$65,000, with an annualized cost of \$8,000. The enhancements to total enclosures would include sealing the roof to improve the negative pressure in the building and installing two sets of doors with associated vestibules and air curtains. The estimated cost is \$984,000. The annualized cost of the enhancements to total enclosures is \$121,430. Installation of a scrubber or WESP on the Feed Dryer system may also be a consideration. Because the cycling process of the WESP, two cells would be required making the WESP more capital intensive and more expensive to operate. Therefore, it is assumed that Exide would install a scrubber. It is estimated that the cost to Exide for the scrubber would be approximately \$325,000 which includes installation, permitting and source testing. The annualized cost would be \$40,100. There would also be an increase in electricity costs of approximately \$44,200 per year to run the equipment.

PAR 1420.1 would also require each facility to submit a Compliance Plan if the ambient lead concentration limit was exceeded. The one-time cost of a compliance Plan is estimated at \$20,000 for each facility. The mass emission limit reduction proposed is not expected to result in any additional costs to either facility as both facilities can meet the proposed limit with existing control equipment. However, the decrease in the mass emission limit will result in one additional source test in one facility annually at a cost of \$50,000 every other year for an annualized cost of \$25,000.

PAR 1420.1 would also require Exide to install three additional monitors to increase the frequency of ambient sampling. Currently Quemetco has at least two monitors at each of their four monitoring sites. Exide has two monitors at three of their monitoring sites and would need to purchase three more for the remaining three sites. The cost of each monitor is estimated at \$30,000. Lastly, PAR 1420.1 would require additional laboratory tests for lead and arsenic. Ten additional laboratory tests would be needed to be done on 243 days for a total of 2,430 tests annually. At a cost of \$99 per test, the daily sampling proposal in the rule would increase costs by \$241,000 annually. The one-time cost of Compliance Plan and capital cost of monitors were annualized over 10-years and with four percent real interest rate. There will also be costs of less

than \$200 annually for signage and additional notifications. Table 7-8 presents the total annual cost of the proposed amendments by category, and by facility. The total annual cost of PAR 1420.1 is estimated to be \$667,310, out of which 83 percent is expected to be incurred by the Exide Company.

**Table 7-8 - Annual Compliance Cost of PAR 1420.1 by Category**

<b>Proposed Rule Requirement</b>	<b>Exide</b>	<b>Quemetco</b>
Enhanced Measures During Maintenance (0.110 µg/m <sup>3</sup> )	\$12,800	\$12,800
Enhanced Housekeeping Measures (0.100 µg/m <sup>3</sup> )	\$175,200	0
Enhancements to Total Enclosures	\$121,420	0
Wheel Washing Station	\$8,000	0
Scrubber	\$40,100	0
Electricity	\$44,200	0
Compliance Plans	\$2,460	\$2,460
Additional Source Testing	\$25,000	0
Ambient Monitors	\$11,070	0
Daily Sampling	\$144,600	\$96,400
Total Cost per Facility	\$555,650	\$111,660
<b>Total Cost of PAR 1420.1</b>	<b>\$667,310</b>	

The total annual cost of the PAR 1420.1 is estimated at approximately \$700,000. When the annual compliance cost is less than one million dollars, the Regional Economic Impact Model (REMI) is not used to analyze impacts on jobs and other socioeconomic impacts because the impact results would be very small and would fall within the noise of the model. A major portion of the socioeconomic report covers the regional jobs and other socioeconomic impacts generated from the REMI model. As such, when the REMI model is not run, the socioeconomic assessment is included in the staff report.~~The annual compliance cost of this magnitude when compared relative to the total value of local economy (about \$1 Trillion) is expected to have no significant economic impacts. As such, the job impacts on the local economy are expected to be small, or within the noise of the Regional Economic Model (REMI) model. Therefore, the REMI model was not used.~~

### **Rule Adoption Relative to the Cost-effective Schedule**

On October 14, 1994, the Governing Board adopted a resolution that requires staff to address whether rules being proposed for adoption are considered in the order of cost-effectiveness. The 2012 Air Quality Management Plan (AQMP) ranked, in the order of cost-effectiveness, all of the control measures for which costs were quantified. It is generally recommended that the most cost-effective actions be taken first. PAR 1420.1 is not a control measure in the 2012 Air Quality Management Plan (AQMP), and thus was not ranked by cost-effectiveness relative to other AQMP control measures in the 2012 AQMP.

## **CALIFORNIA ENVIRONMENTAL QUALITY ACT**

Pursuant to the California Environmental Quality Act (CEQA) and SCAQMD Rule 110, SCAQMD staff evaluated the proposed project and made the appropriate CEQA determination.

The public workshop meeting also served as a CEQA scoping meeting to solicit public input on any potential environmental impacts from the proposed project. Comments received at the public workshop on any environmental impacts were considered when making the CEQA determination. One comment letter was received from the public relative to the environmental analysis in the Draft Subsequent Environmental Assessment (SEA) and a response is included in the Final SEA.

## **DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727**

### **Requirements to Make Findings**

California Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the SCAQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report.

### **Necessity**

PAR 1420.1 is needed to further protect public health by reducing lead emissions from large lead-acid battery recycling facilities. For a toxic air contaminant, such as lead, for which there is no level of exposure that can yet be identified with confidence, as clearly not being associated with some risk of deleterious health effects, the intent of this ~~control measure~~ proposed rule is to reduce emissions to the lowest level achievable through the most effective feasible control method. Recent testing of surface dust and soil have shown lead-contamination sufficiently high to pose a threat to the health of the people that live and work near in the surrounding community when re-entrained into the ambient air. The proposed rule will reduce lead emissions from point sources as well as fugitive emissions including lead from surface dust and soil re-entrained into the air from facility operations.

Lowering the ambient lead concentration is not inconsistent with studies that USEPA reviewed indicating that lower ambient lead concentrations would result in less impacts to children. According to USEPA, the assessment of the currently available studies continues to recognize a non-linear relationship between blood lead and effects on cognitive function, with a greater incremental effect (greater slope) at lower relative to higher blood lead levels.<sup>2</sup> Chronic health effects include increased risk of cancer, nervous and reproductive system disorders, neurological and respiratory damage, cognitive and behavioral changes, and hypertension. In addition, young children accumulate lead more readily than do those of adults are more vulnerable to certain biological effects of lead including learning disabilities, behavioral problems, and deficits in IQ.

### **Authority**

The SCAQMD Governing Board has authority to adopt PAR 1420.1 pursuant to the California Health and Safety Code Sections 39002, 39650 et. seq., 40000, 40001, 40440, 40441, 40702, 40725 through 40728, 41508, 41700 and 41706.

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<sup>2</sup> U.S. EPA's "Policy Assessment for the Review of the Lead National Ambient Air Quality Standards," Environmental Protection Agency, May 2014



**Clarity**

PAR 1420.1 is written or displayed so that its meaning can be easily understood by the persons directly affected by it.

**Consistency**

PAR 1420.1 is in harmony with and not in conflict with or contradictory to, existing statutes, court decisions or state or federal regulations.

**Non-Duplication**

PAR 1420.1 will not impose the same requirements as any existing state or federal regulations. The proposed amended rule is necessary and proper to execute the powers and duties granted to, and imposed upon, the SCAQMD.

**Reference**

By adopting PAR 1420.1, the SCAQMD Governing Board will be implementing, interpreting or making specific the provisions of the California Health and Safety Code Sections 40001 (rules to achieve and maintain ambient air quality standards), 41700 (nuisance), 41706(b) (emission standards for lead compounds from non-vehicular sources), Federal Clean Air Act Section 112 (Hazardous Air Pollutants), and CAA Section 116.

**COMPARATIVE ANALYSIS**

Health and Safety Code section 40727.2 requires a comparative analysis of the proposed amended rule with any Federal or District rules and regulations applicable to the same source. See Table 8-9 below.

**Table 89: Comparison of PAR 1420.1 with SCAQMD Rule 1420.1, SCAQMD Rule 1420, the 2008 Lead NAAQS, and the NESHAP for Secondary Lead Smelters**

<b>Rule Element</b>	<b>PAR 1420.1</b>	<b>SCAQMD Rule 1420.1</b>	<b>SCAQMD Rule 1420</b>	<b>CARB 1998-12-30 Non Ferrous Metal Melting ATCM</b>	<b>2008 Lead NAAQS</b>	<b>NESHAP from Secondary Lead Smelting</b>
Applicability	No proposed changes	Lead-acid battery recycling facilities that have ever processed more than 50,000 lead-tons/year	Facilities that use or process lead-containing materials	Facilities that melt non-ferrous metals including lead	All States	Secondary lead smelters
Ambient Air Quality Standard	January 1, 2016, to December 31, 2016 meet $0.110 \mu\text{g}/\text{m}^3$ averaged over 30 consecutive days. On and after January 1, 2017 meet $0.100 \mu\text{g}/\text{m}^3$ averaged over 30 consecutive days.	Meet $0.150 \mu\text{g}/\text{m}^3$ averaged over 30 consecutive days	$1.5 \mu\text{g}/\text{m}^3$ averaged over 30 days	None	$0.15 \mu\text{g}/\text{m}^3$ : 3-month rolling average Demonstrated over a 3-year period.	None
Total Enclosures	No proposed changes	Total enclosures for main areas where processing, handling and storage of lead-containing materials occur	None	Enclosed storage area for dust-forming material including, but not limited to, dross, ash, or feed material	None	Total or partial enclosures for: - Smelting furnace and dryer charging hoppers, chutes, and skip hoists; - Smelting furnace lead taps, and molds during tapping; - Refining kettles; - Dryer transition pieces; and Agglomerating

<b>Rule Element</b>	<b>PAR 1420.1</b>	<b>SCAQMD Rule 1420.1</b>	<b>SCAQMD Rule 1420</b>	<b>CARB 1998-12-30 Non Ferrous Metal Melting ATCM</b>	<b>2008 Lead NAAQS</b>	<b>NESHAP from Secondary Lead Smelting</b>
						furnace product taps
Emission Standard and Requirements for Lead Control Devices	Total facility mass emission rate of 0.023 lb/hr of lead from all lead point sources; Maximum emission rate, use of filters and secondary lead controls on dryer remain unchanged.	Total facility mass emission rate of 0.045 lb/hr of lead from all lead point sources; maximum emission rate of 0.010 lb/hr of lead for any individual lead point source  Use of filters or bags that are rated by the manufacturer to achieve 99.97 percent control efficiency on 0.3 micron particles or made of PTFE membrane material Secondary lead controls on dryer	99% control efficiency for particulate matter; 98% control efficiency for lead	99% control efficiency	None	Concentration of 2.0 mg/dscm
Compliance Plan	Only required if a facility exceeds ambient lead concentration limit of 0.110 $\mu\text{g}/\text{m}^3$ from January 1, 2016 to December 31, 2016 or 0.100 $\mu\text{g}/\text{m}^3$ on or after January 1, 2017 Identifies additional lead control measures beyond the rule.	Only required if a facility exceeds 0.120 $\mu\text{g}/\text{m}^3$ ; 30 consecutive day avg.; Identifies additional lead control measures beyond the rule.	Specifies general facility information	None	None	None

<b>Rule Element</b>	<b>PAR 1420.1</b>	<b>SCAQMD Rule 1420.1</b>	<b>SCAQMD Rule 1420</b>	<b>CARB 1998-12-30 Non Ferrous Metal Melting ATCM</b>	<b>2008 Lead NAAQS</b>	<b>NESHAP from Secondary Lead Smelting</b>
Ambient Air Monitoring Requirements	<ul style="list-style-type: none"> <li>- Daily sampling for lead and arsenic</li> <li>- Provisions included for monitor failure</li> <li>- One year sample retention</li> <li>- Number of monitors and reporting frequency remain unchanged</li> </ul>	<p>Minimum of four monitors at facility locations approved by the Executive Officer</p> <p>Samples collected at least once every three days Results reported monthly</p> <p>Daily sampling if <math>0.120 \mu\text{g}/\text{m}^3</math> is exceeded after January 1, 2015</p>	<p>Minimum of two monitors at facility locations approved by the Executive Officer</p> <p>Samples collected every six days Results reported quarterly</p>	None	<p>For states, a minimum of:</p> <ul style="list-style-type: none"> <li>- One source-oriented monitor at all facilities emitting 1.0 tons of lead/year; and</li> <li>- One non-source-oriented monitor in urban areas with a population of at least 500,000 people</li> <li>- Samples collected every six days</li> </ul>	None
Housekeeping and Maintenance Requirements	<ul style="list-style-type: none"> <li>- All lead or arsenic containing trash or debris outside of a total enclosure shall be kept in closed containers free of leaks</li> <li>- Posted facility vehicle speed limit of 5 miles per hour</li> <li>- All outside concrete or asphalt cutting performed under 100% wet conditions</li> <li>- Grading of soil only on soils sufficiently wet to prevent fugitive emissions</li> </ul>	<p>Prescribed requirements for cleaning frequencies of specific areas; maintenance activity; building integrity inspections; storage and transport of lead-containing materials; onsite mobile sweeping; and surface impoundment</p>	<p>Requirements for storage of dust-forming material; weekly cleaning of surfaces subject to vehicular or foot traffic; and storage, disposal, recovery, and recycling of lead or lead-containing wastes generated from housekeeping</p>	Surfaces subject to vehicular or foot traffic shall be vacuumed, wet mopped or otherwise maintained	None	<p>Periodic wash down of plant roadways (lower frequency than PAR 1420.1); wet suppression of battery breaking area storage piles; vehicle wet washing of vehicles exiting the materials handling and storage areas</p>

Rule Element	PAR 1420.1	SCAQMD Rule 1420.1	SCAQMD Rule 1420	CARB 1998-12-30 Non Ferrous Metal Melting ATCM	2008 Lead NAAQS	NESHAP from Secondary Lead Smelting
		cleanings	activities			
Reporting Requirements	<p>- Reporting to Executive Officer within 72 hours of daily ambient air lead concentration of 0.300 µg/m<sup>3</sup> with the following information:</p> <ul style="list-style-type: none"> <li>o Date of the occurrence;</li> <li>o Name of the monitor;</li> <li>o Ambient lead concentration at the monitor for the 24 hour sample;</li> <li>o Potential cause or causes of the occurrence; and</li> <li>o Potential remedies to prevent the reoccurrence.</li> <li>o Caution signs posted at entrances and perimeter</li> <li>o Notification of breach of total enclosure</li> </ul>		Ambient air lead and wind monitoring for any lead-processing facility that is required or elects to do ambient air monitoring	- Source test results Amount of metal processed if requesting exemption	For states: <ul style="list-style-type: none"> <li>- State Implementation Plan submittal;</li> <li>- Periodic emissions reports from stationary source monitors;</li> <li>- Ambient air quality data and associated assurance data</li> </ul>	- Lead control alarm/failure reports including fugitive dust control measures performed during failures

## REFERENCES

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## REFERENCES

“DTSC Review of Step-out Dust and Soil Sampling Report and Order to Perform Emergency Response Interim Measures to Clean Up Off-site Contaminated Soil, Dust, and Sediment, Exide Technologies, Vernon, CA (Corrective Action Consent Order, Docket Number P3-01/02-100)” P3-01 /02-010”, Department of Toxics Substances Control, [https://www.dtsc.ca.gov/HazardousWaste/Projects/upload/Exide Technologies Letter Emergency Response Intertim Measure.pdf](https://www.dtsc.ca.gov/HazardousWaste/Projects/upload/Exide_Technologies_Letter_Emergency_Response_Interim_Measure.pdf), accessed January 12, 2015.

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U.S. EPA’s “Policy Assessment for the Review of the Lead National Ambient Air Quality Standards,” Environmental Protection Agency, May 2014

**ATTACHMENT H**

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

**Final Subsequent Environmental Assessment for:**

**Proposed Amended Rule 1420.1 Emissions Standard for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities**

**February 2015**

**SCAQMD No. 150127CC**

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## PREFACE

This document constitutes the Final Subsequent Environmental Assessment (SEA) for Proposed Amended Rule (PAR) 1420.1 – Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities. This SEA is subsequent to PAR 1420.1 Final EA –January 2014. The Draft SEA was released for a 30-day public review and comment period from January 27 to February 25, 2015. One comment letter was received from the public relative to the environmental analysis in the Draft SEA. The comment letter and response to the comments on the Draft SEA are included in Appendix C.

Subsequent to the release of the Draft SEA, minor additions and modifications were made to this SEA for clarification purposes. To facilitate identifying the modifications in the document, changes are included as underlined text and text removed from the document are indicated by ~~striketrough~~. None of the modifications alter any conclusions reached in the Draft SEA. As a result, these minor revisions do not require recirculation of the document pursuant to CEQA Guidelines §15073.5. Therefore, this document now constitutes the Final SEA for PAR 1420.1.

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# **CHAPTER 1**

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## **PROJECT DESCRIPTION**

**Introduction**

**California Environmental Quality Act**

**Project Location**

**Project Objectives**

**Project Background**

**Project Description**

**Emission Control Technologies**

## **INTRODUCTION**

Rule 1420.1 – Emission Standards for Lead from Lead-Acid Battery Recycling Facilities was adopted on November 5, 2010 and applies to large lead-acid battery recycling facilities that process more than 50,000 tons of lead a year. Rule 1420.1 was amended on January 10, 2014 to reduce other toxic (i.e. arsenic, benzene, and 1,3-butadiene) emissions from affected facilities. It was amended again on March 7, 2014, to include a multi-metals demonstration program to continuously monitor lead, arsenic, and other metals and clarify language that requires affected facilities to reimburse SCAQMD for funds spent to deploy independent third-party contractors who conduct investigations of unplanned shutdowns according to Rule 1420.1. The amendment renamed the rule as Rule 1420.1 - Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities, to reflect these changes. The purpose of Rule 1420.1 is to protect public health by reducing exposure to emissions of lead, arsenic, benzene, and 1,3 butadiene from these facilities and to help ensure attainment of the National Ambient Air Quality Standard for lead.

SCAQMD staff is currently proposing amendments to Rule 1420.1 to further reduce lead emissions at large lead acid battery recycling facilities to continue to protect public health. Proposed Amended Rule (PAR) 1420.1 lowers the ambient lead concentration and point source limits to reduce the amount of lead emitted into the air from point and fugitive sources thereby reducing the further accumulation of lead dust in and around the facility to better ensure protection of public health.

## **CALIFORNIA ENVIRONMENTAL QUALITY ACT**

Amending Rule 1420.1 is a discretionary action, which has the potential to result in direct or indirect changes to the environment and, therefore, is considered a “project” as defined by the California Environmental Quality Act (CEQA). SCAQMD is the lead agency for the proposed project and has prepared this ~~Draft~~ Final Subsequent Environmental Assessment (SEA) pursuant to its Certified Regulatory Program (CEQA Guidelines § 15251). California Public Resources Code §21080.5 allows public agencies with regulatory programs to prepare a plan or other written document in lieu of an environmental impact report or negative declaration once the Secretary of the Resources Agency has certified the regulatory program. SCAQMD's regulatory program was certified by the Secretary of the Resources Agency on March 1, 1989, and is codified as SCAQMD Rule 110.

CEQA and SCAQMD Rule 110 require that potential adverse environmental impacts of proposed projects be evaluated and that feasible methods to reduce or avoid significant adverse environmental impacts of these projects be identified. To fulfill the purpose and intent of CEQA, this ~~Draft~~ Final SEA addresses the potential adverse environmental impacts associated with the proposed project according to CEQA Guidelines § ~~15252~~ 15064. It states that the lead agency has an obligation to identify and evaluate the environmental effects of the project. The ~~Draft~~ Final SEA is an informational document intended to: (a) provide the lead agency, responsible agencies, decision makers and the general public with information on the environmental effects of the proposed project; and, (b) identify possible ways to minimize the significant effects.

A Subsequent EA is the appropriate CEQA document for the proposed project because there are subsequent changes proposed to Rule 1420.1 (CEQA Guidelines §15162). The proposed project is a modification of an earlier project and this analysis considered only the incremental effects of the proposed project.

The California Environmental Quality Act (CEQA) Guidelines Sections 15162 through 15164 set forth the criteria for determining the appropriate additional environmental documentation, if any, to be completed when there is a previously adopted EIR or Negative Declaration covering the project for which a subsequent discretionary action is required. The SCAQMD prepared this SEA to the previously adopted EA. This SEA is governed by Section 15162 (a) of the CEQA Guidelines, which provides that where a negative declaration has been adopted for a project, “no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:

- 1) Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- 2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
- 3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the Negative Declaration was adopted, shows any of the following:
  - a) The project will have one or more significant effects not discussed in the previous EIR or negative declaration;
  - b) Significant effects previously examined will be substantially more severe than shown in the previous EIR;
  - c) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
  - d) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.”

Section 15162(b) provides that if a subsequent EIR is not required under 15162 (a), then “the lead agency shall determine whether to prepare a subsequent negative declaration, an addendum, or no further documentation.”

SCAQMD’s review of the proposed project shows that the proposed project is not expected to generate significant adverse effects on the environment. Pursuant to CEQA Guidelines §§ 15126.4 (a)(3), and 15126.6, mitigation measures and alternative are not required for effects which are not found to be significant, thus, no mitigation measures or alternatives to the project are included in the ~~Draft~~ Final SEA. In addition, because SCAQMD has a certified regulatory program, the Environmental Assessment is an appropriate substitute for an EIR or Negative Declaration (CEQA Guidelines § 15252). Pursuant to CEQA Guidelines § 15252(a)(2)(B) and supported by the environmental checklist (in Chapter 2), if the project would not have any significant or potentially significant effect on the environment, “no alternatives or mitigation measures are proposed to avoid or reduce any significant effects on the environment.” Comments received on the Draft SEA during the 30-day public review period will be have been addressed and included in the Final SEA. One comment letter was received on the Draft SEA. The comment letter and response to comments are included in Appendix C.

### PROJECT LOCATION

The SCAQMD has jurisdiction over an area of 10,473 square miles (referred to hereafter as the district), consisting of the four-county South Coast Air Basin (Basin) and the Riverside County portions of the Salton Sea Air Basin (SSAB) and the Mojave Desert Air Basin (MDAB). The Basin, which is a subarea of the SCAQMD’s jurisdiction, is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The 6,745 square-mile Basin includes all of Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino counties. The Riverside County portion of the SSAB and MDAB is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley. The federal nonattainment area (known as the Coachella Valley Planning Area) is a subregion of both Riverside County and the SSAB and is bounded by the San Jacinto Mountains to the west and the eastern boundary of the Coachella Valley to the east (see Figure 1-1).



Figure 1-1 Boundaries of the South Coast Air Quality Management District



## **PROJECT OBJECTIVES**

The objectives of PAR 1420.1 are to protect public health by further reducing lead emissions from large lead-acid battery recycling facilities by:

- Reducing the ambient air lead concentration limit
- Reducing the point source emission limit for lead
- Requiring daily sampling for ambient lead and arsenic
- Altered thresholds for compliance plans and curtailments are reduced to correlate with the proposed limits for ambient lead concentrations and total mass facility emission rates
- Requiring additional housekeeping and maintenance provisions
- Requiring additional reporting requirements

## **PROJECT BACKGROUND**

### **Health Effects of Lead**

Lead in the atmosphere is present as a mixture of a number of lead compounds. Leaded gasoline and lead smelters have been the main sources of lead emitted into the air. Due to the phasing out of leaded gasoline, there was a dramatic reduction in atmospheric lead in the Basin over the past three decades.

Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure.

Lead poisoning can cause anemia, lethargy, seizures, and death. It appears that there are no direct effects of lead on the respiratory system. Lead can be stored in the bone from early-age environmental exposure, and elevated blood lead levels can occur due to breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland), and osteoporosis (breakdown of bone tissue). Fetuses and breast-fed babies can be exposed to higher levels of lead because of previous environmental lead exposure of their mothers.

The old federal and current state standards for lead were not exceeded in any area of the district in 2010. There have been no violations of these standards at the SCAQMD's regular air monitoring stations since 1982, as a result of removal of lead from gasoline. The maximum quarterly average lead concentration ( $0.01 \mu\text{g}/\text{m}^3$  at monitoring stations in South San Gabriel Valley, South Central Los Angeles County, and Central San Bernardino Valley No. 2) was 0.7 percent of the old federal quarterly average lead standard ( $1.5 \mu\text{g}/\text{m}^3$ ). The maximum monthly average lead concentration ( $0.01 \mu\text{g}/\text{m}^3$  in South San Gabriel Valley and South Central Los Angeles County), measured at special monitoring sites immediately adjacent to stationary sources of lead was 0.7 percent of the state monthly average lead standard. No lead data were obtained at SSAB and Orange County stations in 2010. Because historical lead data showed concentrations in SSAB and Orange County areas to be well below the standard, measurements have been discontinued.

## **Regulatory History**

Lead-acid battery recyclers have been subject to environmental air quality regulations for more than two decades. Below is a chronology of regulatory activities:

- In November 1970, CARB set the state ambient air quality standard for lead at 1.5 microgram per cubic meter averaged over 30 days.
- In October 1978, the U.S. EPA adopted the National Ambient Air Quality Standards (NAAQS) for lead requiring attainment with a lead ambient concentration of 1.5 microgram per cubic meter averaged over a calendar quarter.
- In September 1992, the SCAQMD adopted Rule 1420 – Emissions Standard for Lead. The rule incorporated the state ambient air quality standard and required control devices on lead emission points, control efficiency requirements for lead control devices, housekeeping, and monitoring or modeling of ambient air quality.
- In October 1992, OEHHA classified lead as a carcinogenic toxic air contaminant and assigned to it a cancer potency factor and a cancer unit risk factor.
- In June 1997, the EPA adopted the National Emissions Standards for Hazardous Air Pollutants (NESHAPS) from Secondary Lead Smelting. The federal regulation required lead emission concentration limits for lead control devices, control of process fugitive emissions, monitoring, recordkeeping, and reporting.
- On November 12, 2008, the EPA signed into regulation an amended NAAQS for lead of 0.15 microgram per cubic meter<sup>1</sup>.

On November 12, 2008, U.S. EPA published new national ambient air quality standards for lead, which became effective January 12, 2010. The existing national lead standard, 1.5 µg/m<sup>3</sup>, was reduced to 0.15 µg/m<sup>3</sup>, averaged over a rolling three-month period. The new federal standard was not exceeded at any source/receptor location in 2010. Nevertheless, U.S. EPA designated the Los Angeles County portion of the Basin as non-attainment for the new lead standard, effective December 31, 2010, primarily based on emissions from two battery recycling facilities. In response to the new federal lead standard, the SCAQMD adopted Rule 1420.1 – Emissions Standard for Lead from Large Lead-Acid Battery Recycling Facilities, in November 2010, to ensure that lead emissions do not exceed the new federal standard. The rule established an ambient lead concentration limit of 0.15 µg/m<sup>3</sup>, averaged over 30 consecutive days, a mass emission limit of 0.045 pounds per hour as well as housekeeping, maintenance and other provisions. Further, in May 2012, the SCAQMD adopted the 2012 Lead SIP to address the revision to the federal lead standard, which outlines the strategy and pollution control activities to demonstrate attainment of the federal lead standard before December 31, 2015. On January 10, 2014, Rule 1420.1 was amended to include an arsenic ambient concentration limit of 10.0 ng/m<sup>3</sup> averaged over a 24-hour period and point source emission limits for arsenic, benzene, and 1,3-butadiene. Curtailment provisions for lead and arsenic and requirements for installation and operation of differential pressure monitors were also included in the amendments.

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<sup>1</sup> Environmental Protection Agency, “National Ambient Air Quality Standards for Lead; Final Rule,” 40 CFR Parts 50, 51, 53, and 58, November 2008.

### **Compliance Determination-Monitoring**

The demonstration of attainment of the lead standard is to be based on measurements using a rolling 3-month averaging form to be evaluated over a three-year period. Measurements are to be determined by EPA-required monitoring networks within each state which consist of both source-oriented and non-source-oriented monitors. The SCAQMD has already established the required monitoring network for both source and non-source-oriented lead monitors.

Ambient monitors are high-volume total suspended particulate samplers placed throughout the South Coast Air Basin and at both upwind and downwind locations of the facilities where maximum ambient concentrations are expected. They measure lead and arsenic concentrations in the ambient air over a midnight-to-midnight, 24 hour period.

Point source emission rates are determined by source tests to demonstrate compliance with the mass emission standards specified in the rule. They are “snapshots” of the efficiency of the control equipment and are conducted when the equipment is installed and annually or biannually thereafter. The tests are conducted in accordance with SCAQMD, CARB or EPA test methods.

### **Affected Facilities**

PAR 1420.1 applies to large lead-acid battery recycling facilities that process more than 50,000 tons of lead annually. Currently there are only two facilities subject to Rule 1420.1 in the Basin: Exide Technologies and Quemetco Inc. Both facilities are currently permitted to process approximately 600 tons of lead per day through a combination of smelting furnaces. Exide Technologies is located in Vernon (Los Angeles County) and Quemetco, Inc. is located in the City of Industry (Los Angeles County).

The affected facilities have several air monitors throughout their sites. These monitors are the litmus test to determine compliance with the ambient concentration limits. They measure lead and arsenic concentrations in the ambient air over a midnight-to-midnight, 24 hour period. See **Error! Reference source not found.** Figure 1-2 and Figure 1-3 for Exide’s and Quemetco’s Ambient Monitoring Locations, respectively.

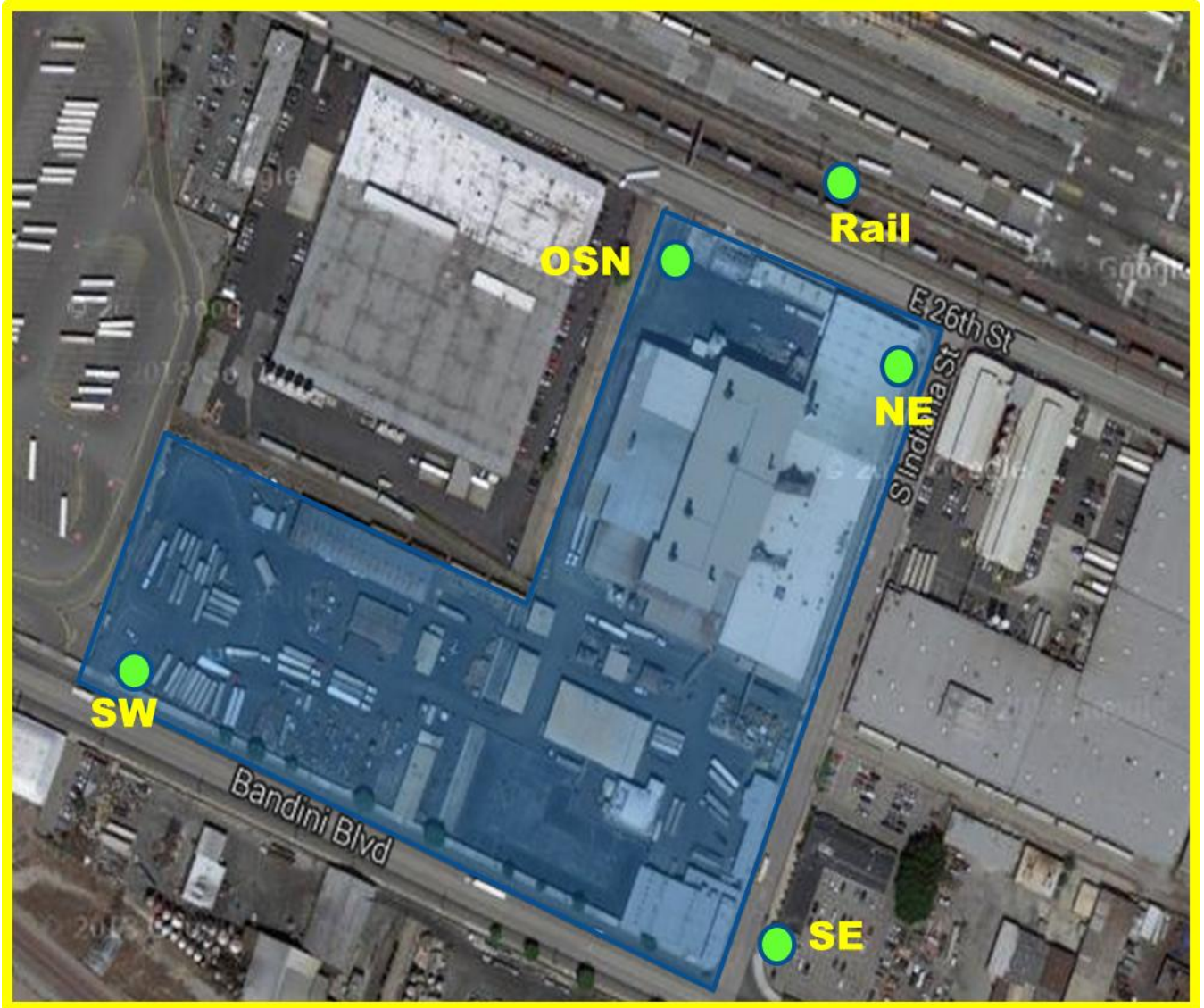


Figure 1-2 Exide's Ambient Monitoring Stations



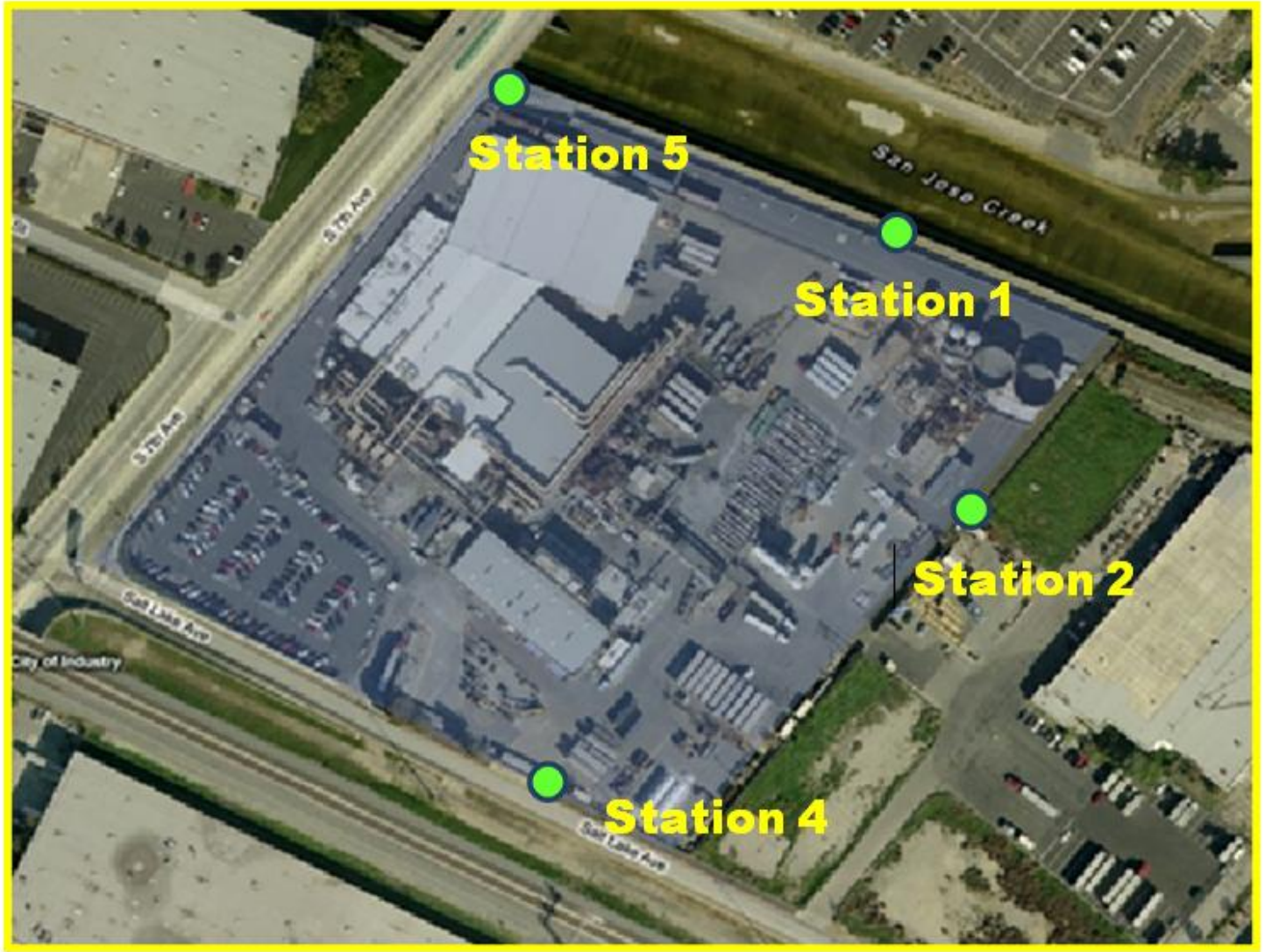


Figure 1-3 Quemetco's Ambient Monitoring Stations

### **Exide's New Air Pollution Control Equipment**

Exide is currently engaged in construction activities associated with the implementation of their Toxic Air Contaminant Reduction Project (compliance with SCAQMD Rules 1420.1 and 1402), which was approved by the SCAQMD on December 5, 2014. This project is intended to improve their control of air pollution emissions from their process gas streams containing gaseous organic air contaminants, carbon monoxide, and oxides of sulfur. The new and modified equipment to be installed includes several air pollution controls (two new scrubbers, two new regenerative thermal oxidizers (RTOs), a new baghouse, filtration systems, and the re-purposing of an existing baghouse). Exide is planning on completing the project in the Spring of 2015. To read more about the project:

[http://www.aqmd.gov/docs/default-source/exide/id-124838-exide-mnd\\_final-\(1\).pdf?sfvrsn=4](http://www.aqmd.gov/docs/default-source/exide/id-124838-exide-mnd_final-(1).pdf?sfvrsn=4)

### **Overview of Existing Operations**

Lead-acid battery recycling facilities are secondary lead smelting operations where spent lead-acid batteries, mostly automotive, and other lead-bearing materials are received from various sources and processed to recover lead, plastics, and acids. The process mainly involves the sorting, melting, and refining of lead-acid batteries, which ultimately produces lead ingots that are then made into new batteries or sold to other entities. Figure 1-4 is a Simplified Flow Diagram of the Process. Below is a general description of the lead recycling process at the affected facilities including potential lead emission points:

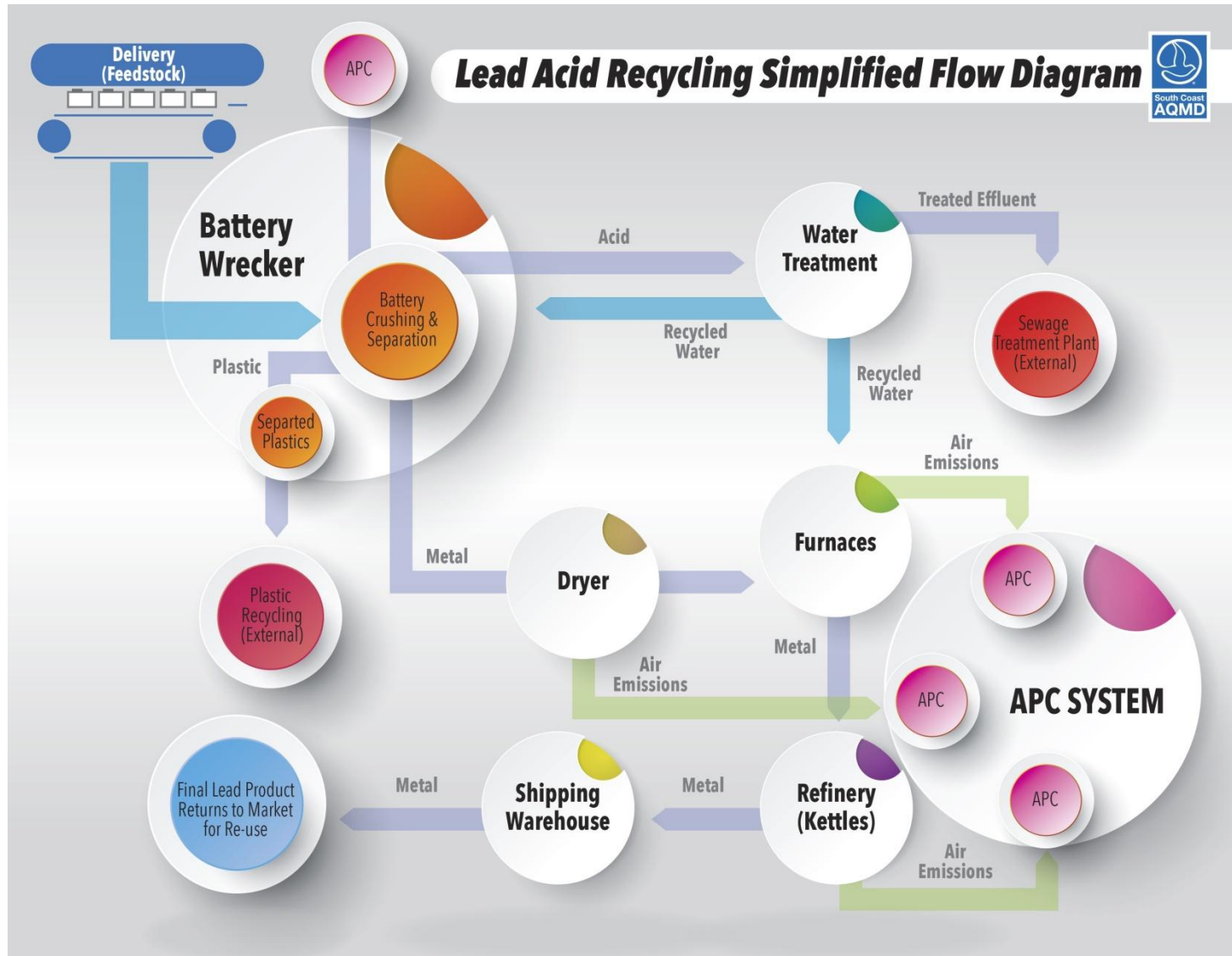


Figure 1-4-Lead Acid Recycling Simplified Flow Diagram

**Phase I – Raw Materials Processing:** Lead-bearing materials recovered from lead-acid batteries are prepared and processed prior to being charged (loaded) to a smelting furnace. The feedstock for lead-acid battery recycling facilities can fluctuate. Although the majority of the feedstock is plastic-cased car batteries, there has been indication that the number of steel-cased batteries may be increasing for one of the facilities.

**Receiving and Storage:** Spent lead-acid batteries are usually received on pallets that are either stored or sent directly to conveyors for immediate crushing.

**Battery Breaking/Crushing:** The spent lead-acid batteries are unloaded from conveyors and loaded into a hammer mill system where they are crushed whole. Both Quemetco and Exide's battery breaking areas are located in a total enclosure that is vented to an emission collection system pursuant to Rule 1420.1. The crushed material is then placed into a series of tanks filled with water in order to filter out any plastic and rubber components of the battery casing and to clean materials of the acids. Through buoyancy effects, the crushed metal material sinks to the bottom of the tanks and goes through a series of screens to further isolate lead-bearing materials. Arsenic and other metals can be found in the lead-bearing materials due to battery parts such as the posts and grids containing alloys of arsenic and lead. The materials are then typically stored in open or partially covered piles if not required for immediate charge preparation.

**Charge Preparation/Rotary Drying/Sweating:** Recovered lead-bearing materials are prepared by blending it with stored lead scrap and reagents prior to being charged to a furnace. The metallic scrap materials are placed in dryers to remove moisture prior to charging to a furnace in order to reduce furnace upsets (puffs and explosions). Some unfiltered plastic and rubber components of the battery casing may be inadvertently introduced into the dryer during this process. The materials are then sweated (subjected to temperatures above the melting temperature of lead, but below that of the other metals) to separate lead from other metals with higher melting points. The process of melting of plastic and rubber parts from the partial combustion of carbon coke (mainly in the dryers) generates toxic organic emissions.

**Phase II – Smelting:** Smelting is the production of crude lead by melting and separating the lead from metallic and non-metallic contaminants and by reducing lead compounds to elemental lead. Smelting is carried out in the blast, electric resistance, reverberatory, and rotary kiln furnaces. These furnaces emit high levels of metal particulates during the charging and tapping processes in addition to toxic organic emissions.

**Cupola (Blast) furnaces:** Typically, "hard" lead, or antimonial lead (containing approximately 10 percent antimony) is produced in blast furnaces. Scrap metal, re-run slag, scrap iron, coke, recycled dross, flue dust (which contain lead and arsenic), and limestone are used as charge materials to the furnace. Process heat is produced by the reaction of the charged coke with blast air that is blown into the furnace. Currently, Exide utilizes a blast furnace, which generates benzene and 1,3-butadiene emissions.

**Electric resistance furnaces:** Electric resistance furnaces generate heat from molten slag that offers resistance to the passage of a current through it. Electric energy is converted into heat when a current flows through electrodes directly into the furnace charge (i.e., the material to be heated). Electric resistance furnaces typically generate less airborne emissions (lead and arsenic) compared to blast or reverberatory furnaces, which utilize combustion processes to generate the



heat necessary to melt the furnace charge materials. Currently, Quemetco is the only lead-acid battery recycler in the Basin utilizing an electric resistance furnace. Quemetco's electric resistance furnace is typically used to further separate lead-containing materials from non lead-containing materials contained in the lead slag produced from the reverberatory furnace.

**Reverberatory furnaces:** Semi-soft lead (containing approximately three to four percent antimony) is produced in reverberatory furnaces, which generate lead and arsenic emissions. Lead scrap, metallic battery parts, oxides, dross, and other residues are used as charge materials to the furnace. The charge materials are heated directly using natural gas, which generate benzene and 1,3-butadiene emissions. Reverberatory furnaces are used by both Exide and Quemetco.

**Phase III – Refining and Casting:** Refining and casting the crude lead from the smelting process can consist of softening, alloying, and oxidation, depending on the degree of purity or alloy type desired. Crude lead produced during smelting operations is remelted and refined by the addition of reagents, such as sulfur and caustic soda. The purified lead is then cast into molds or ingots. Refining furnaces and kettles are typically gas or oil-fired and maintained at operating temperatures between 600 to 1,300 degrees Fahrenheit. Arsenic fumes may be emitted when molten lead is transferred to refining kettles and lead particulates may become airborne off refining kettle contents due to thermal rise processes.

**Alloying furnaces:** Alloying furnaces are kettle furnaces used to simply melt and mix ingots of lead and alloy materials, such as antimony, tin, arsenic, copper, and nickel. Other reagents used include sodium hydroxide, sodium nitrate, carbon coke, calcium metal, sodium metal, and phosphates.

**Refining furnaces:** Refining furnaces are used to either remove copper and antimony for soft lead production, or to remove arsenic, copper, and nickel for hard lead production. Sulfur may be added to the molten lead to remove copper. The resultant copper sulfide is skimmed off as dross and may be processed in a blast furnace to recover residual lead. Aluminum chloride is used to remove copper, antimony, and nickel.

**Oxidizing furnaces:** Either kettle or reverberatory units are used to oxidize lead and to entrain the product lead oxides in the combustion air stream for subsequent recovery in high-efficiency baghouses.

**PROJECT DESCRIPTION**

The following is a summary of the proposed amendments to PAR 1420.1 – Emission Standards for Lead and Other Toxic Air Contaminants from Lead-Acid Battery Recycling Facilities. A copy of PAR 1420.1 with the specific details of the amendments can be found in Appendix A. Both the following and Appendix A constitute a robust project description.

**Subdivision (a) – Purpose**

No change.

**Subdivision (b) – Applicability**

No change.

**Subdivision (c) – Definitions**

The definition for Maintenance Activity was modified to include grading and soil disturbances. Soil disturbances include soil sampling, soil remediation or other activities where soil is moved, removed or stored.

**Subdivision (d) – General Requirements**

The ambient air concentration of lead in paragraph (d)(1) would require a reduction from 0.150 µg/m<sup>3</sup> to 0.110 µg/m<sup>3</sup> averaged over any 30 consecutive days as specified in subparagraph (d)(1), effective January 1, 2016. The ambient lead concentration limit would be further reduced to 0.100 µg/m<sup>3</sup> effective January 1, 2017, see Table 1-1. Other minor changes are made for administrative purposes.

**Table 1-1 PAR 1420.1 Proposed Lower Ambient Lead Limit**

<b>Effective Date</b>	<b>Ambient Air Concentration of Lead, micrograms per cubic meter (µg/m<sup>3</sup>), averaged over 30 consecutive days</b>
Prior to January 1, 2016	0.150 µg/m <sup>3</sup>
<i>On and after January 1, 2016</i>	<i>0.110 µg/m<sup>3</sup></i>
<i>On and after January 1, 2017</i>	<i>0.100 µg/m<sup>3</sup></i>

**Subdivision (e) – Total Enclosures**

No changes.

**Subdivision (f) – Lead and Arsenic Point Source Emissions Controls**

Effective January 1, 2016, the total facility mass lead emissions from all sources will be reduced from 0.045 pounds per hour to 0.023 pounds per hour.

**Subdivision (g) – Compliance Plan**

New Compliance Plans would be required if emissions are discharged into the atmosphere which contribute to an ambient lead air concentration exceeding the requirements specified in paragraph (d)(1). The effective dates for the Compliance Plan would be the same as paragraph (d)(1). Other minor administrative changes are also proposed.

**Subdivision (h) – Housekeeping Requirements**

Provisions in (h)(10) would require that all lead or arsenic containing trash and debris be contained in covered containers, free of leaks, that are opened only when adding or removing trash or debris.

New signs are proposed to limit the plant-wide speed of vehicles to 5 miles per hour.

**Subdivision (i) – Maintenance Activity**

Requirements in (i)(1)(D) prohibit maintenance work done outside of an enclosure if instantaneous wind speeds exceed 20 miles per hour. Subparagraphs (i)(1)(E) and (i)(1)(F) require concrete or asphalt cutting or drilling to be performed under 100% wet conditions and for soil grading to be done on wet soil respectively.

**Subdivision (j) – Ambient Air Monitoring Sampling Requirements**

Effective upon adoption of the rule, lead and arsenic samples shall be conducted daily at all monitoring sites. Provisions are included for sample failures that occur beyond the control of the facility. Samples shall be retained for one year and be available upon request. Other minor administrative changes are also proposed.

**Subdivision (k) – Source Tests**

Rule 1420.1 paragraph (k)(1) allows facilities that demonstrate a facility wide lead point source emission rate of 0.0025 lb/hr or less to conduct source testing every 24 months rather than annually. The rate was based on an overall facility point source rate of 0.045 lb/hr. The proposed overall facility rate is to be reduced by 50 percent as noted in the Lead Point Source Emission Rate discussion above. Thus the source test provision will be reduced by the same proportion, or 0.0012 lb/hr. This is projected to require one additional source test at Exide to test annually rather than every 24 months.

Currently under paragraph (k)(9), the operator may use an alternative or equivalent source test method that shall be approved by the SCAQMD Executive Officer as well as the California Air Resources Board (CARB) and U.S. EPA. Staff is proposing that the approval beyond the SCAQMD Executive Officer be limited to the agency that developed the test method in question. For example, if an equivalent procedure was sought for EPA Method TO-15, then only SCAQMD and U.S. EPA approval would be necessary.

PAR 1420.1 (k)(15), requires that the reports from source testing conducted pursuant to the rule to be submitted to the SCAQMD within 90 days or less after the completion of the source testing.

**Subdivision (l) – New Facilities**

No change.

**Subdivision (m) – Recordkeeping**

No change.

**Subdivision (n) – Reporting**

Proposed Amended Rule 1420.1 will include a provision requiring large lead-acid battery recycling facilities to provide specific information if there is a spike in the daily ambient lead

concentration. Under PAR 1420.1, if any daily ambient lead sample is greater than  $0.300 \mu\text{g}/\text{m}^3$ , large lead-acid battery recycling facilities would be required to notify the Executive Officer in writing within 72 hours of when the facility was informed via laboratory report or other written or verbal communication that the ambient air concentration of lead was greater  $0.300 \mu\text{g}/\text{m}^3$  for any 24-hour sample. The operator is required to provide the date of the occurrence, the name of the monitor, the ambient lead concentration for the 24-hour sample, the potential cause or causes of the occurrence, and potential remedies to prevent the reoccurrence.

Under PAR 1420.1, paragraph (n)(1), caution signs shall be posted at all entrances and the perimeter of the facilities stating, "Caution, Lead-Acid Battery Recycling Facility, Call Before Digging, Facility Contact". The proposed amended rule specifies the location sign postings, the size of the sign, and specific lettering requirements.

The notification provision for unplanned shutdowns is revised to require notification regardless of potential emissions. The provision now applies even when the unplanned shutdown will not result in lead emissions and supersedes previous interpretations.

Under PAR 1420.1, paragraph (n)(2)(J), notifications are proposed for planned or unplanned breaches to total enclosures. Planned openings require notice to the Executive Officer at least ten calendar days prior while unplanned openings require notification within one hour afterwards. The notice shall include the date and time of the breach, an explanation of why it occurred, the duration or estimated duration of the event and facility contact information.

#### **Subdivision (o) – Curtailment Requirements**

Effective January 1, 2016, the first tier of the monitored ambient air concentration rate for mandatory daily process curtailments in Table 1 of subparagraph (p)(1) will be reduced to coincide with the proposed limit for ambient air concentrations of lead as specified in paragraph (d)(1). The timeframe for the duration of the curtailment would also be amended to reflect the proposed ambient air concentration limit. Similarly, staff is proposing to reduce the first tier of the total facility mass emission rate for process curtailments in Table 2 of subparagraph (p)(2) to coincide with the proposed reduction of total facility lead point sources emission rate under subparagraph (f)(1)(A) from 0.045 lb/hour to 0.023 lb/hour.

#### **Subdivision (p) – Severability**

No change.

#### **Appendix 1 – Content of Initial Facility Status Reports**

No change.

#### **Appendix 2 – Content of Ongoing Facility Status Reports**

No change.

Additional changes would be made to improve readability.

## **EMISSIONS CONTROL TECHNOLOGIES**

### **Existing Controls**

The two impacted facilities are secondary lead smelting operations where spent automotive and other lead-bearing materials are processed to recover lead, plastics and acids. The process generally involves the sorting, smelting and refining; ultimately producing lead ingots. Lead, arsenic and other toxic or criteria pollutant emissions are vented directly to air pollution control equipment, captured in building enclosures and then vented to air pollution control equipment or are fugitive emissions that do not get captured by air pollution control equipment and come into contact with ambient air.

Both facilities use baghouses or filter systems to control arsenic and lead emissions from process operations and building enclosures. Quemetco vents all the exhaust from particulate control to a centralized wet electrostatic precipitator (WESP). In addition, Quemetco has a RTO and scrubber. It is anticipated that the proposed rule will not result in any additional control devices to be installed at Quemetco. Exide vents particulate emissions to a variety of secondary, tertiary and even quaternary control devices. These devices include high efficiency particulate arrestors, cyclones, scrubber and thermal oxidizers. In the proposed rule, it is anticipated that Exide will have to make substantial improvements to their housekeeping procedures and consider installing a scrubber or WESP on their feed dryer to comply with the proposed ambient concentration limit of 0.100  $\mu\text{g}/\text{m}^3$ .

### **Compliance with PAR 1420.1**

To meet the ambient lead concentration and point source limits, the facilities are expected to further control lead emissions. The following discusses the control equipment currently or could potentially be installed to assist in achieving compliance of the proposed lower limits. However, the control of fugitive lead dust is anticipated to be the primarily method to comply with the new ambient lead concentration limits.

Several types of controls for lead emissions are currently used at the lead-acid battery recycling facilities in the Basin. Emissions at the large lead-acid battery recycling facilities are generally categorized as either point source emissions or fugitive emissions. Point source emissions are those emissions that are vented to a stack where the stack can be from a specific piece of equipment such as a furnace or building. Fugitive emissions are emissions that are not contained and/or not captured in air pollution control device and are released to the ambient air. Fugitive emissions can settle on surfaces such as roof tops and ground surfaces and can be re-entrained in the ambient air.

Fugitive emissions can accumulate in and around process areas, from point sources, raw material storage areas, on roof tops, and during maintenance operations to name a few. There are a variety of housekeeping and containment strategies that can be implemented to minimize fugitive emissions. Rule 1420.1 currently controls fugitive emissions through requirements for control strategies such as total enclosures with negative air pressure that are vented to pollution control devices, procedures for containment during maintenance activities, and a number of housekeeping provisions.

### **Point Source Control Strategies for Lead**

The following describes lead point source control strategies. As with any type of control device, maintenance and proper operation of the control device are important to ensure the control device can achieve its maximum control efficiency. The following provides a description of baghouses and filter controls, wet scrubbers, high efficiency particulate arrestors (HEPA), electrostatic precipitators and wet electrostatic precipitators. Use of multistage point source controls such as use of baghouse filters and HEPA filters can improve the capture efficiency and provide additional protection. Lead emissions from lead processes discussed in the previous section are vented to one or more lead control devices listed below:

Point source emissions from the processes discussed in the previous section can be vented to one or more emission control devices listed below. In general for lead particulate controls, a series of filter media and/or scrubbers can be used to control lead emissions. Lead controls at both large lead-acid battery recycling facilities use secondary, tertiary, and some cases quaternary pollution controls to control lead emissions. It is imperative that the control of emissions, including the routing of these emissions to the appropriate emission control device, is designed, maintained, and operated properly in order to achieve the intended level of control described herein.

#### **Baghouses and Filters**

Baghouses operate by collecting particles on a fabric filter. Typically, they consist of fabric bags of tubular or envelope shapes. As an air stream flows through the bags, small particles are initially captured and retained on the fabric filter by one or a combination of the following collection mechanisms: impaction, direct interception, diffusion, electrostatic attraction, and gravitational settling. Once dust has accumulated on the walls of the bags, the “dust mat” acts as a sleeve to further increase particulate matter capture. Rule 1420.1 requires that filter bags be polytetrafluoroethylene or materials that are equally as effective for control of particulate emissions.

Baghouses are commonly used in metal melting operations. They have one of the highest control efficiencies for particulate emissions, and the captured particulate can be recycled to recover metal. Operating parameters of melting operations, such as exhaust stream temperature, gas stream velocity, and particulate chemical properties must be taken into account when designing the baghouse.

Daily maintenance and monitoring of the baghouse is necessary to ensure that it continuously meets the required standard of efficiency. Gas volume, temperature, pressure drop, and dust load are monitored continuously or intermittently. Baghouse shaking and sending pulses of air backwards through the bags is done at specific intervals, or when the bags are overloaded, to remove the captured particulate matter from the bags and drop it into a hopper below the bags.

Baghouse and filter technology combined can achieve overall particulate matter efficiencies. The well designed baghouse can control 99 percent of particulate emissions. The control efficiency of arsenic particulates is anticipated to be slightly lower, since metals are found in greater amounts on smaller particles. Arsenic particulate removal efficiency is at least 98 percent for a baghouse with 99 percent efficiency for particulates. Organic and arsenic vapors are not controlled by baghouses.

Arrays of filters are also used to collect particulate matter. They can be used after the bags in a baghouse to further reduce emissions or can be used alone as in a spray booth. Filters are often used in combination with a prefilter which is “changed out” on a regular basis allowing the bank of filter cartridges to last longer.

Used in conjunction with a prefilter, high-efficiency particulate air (HEPA) filters can trap particles as small as 0.3  $\mu\text{m}$  at an efficiency of 99.97 percent or greater. Like cartridge filters, HEPA filter elements are of pleated construction. HEPA filters are generally limited to ambient temperature (100 degrees Fahrenheit), though special applications for higher temperatures are available. Unlike bags or cartridge filters, HEPA filters are not automatically cleaned. When a HEPA filter element becomes loaded with particulate matter, the element is changed out and disposed of as hazardous waste. Filters can be applied to controls such as baghouses to reduce arsenic emissions from lower temperature exhaust streams and fugitive dust emissions collected within total enclosures. They can also be utilized in negative air equipment or vacuums used to conduct housekeeping activities throughout the facility. Rule 1420.1 requires filter media including HEPA and cartridge-type filters to be rated by the manufacturer to achieve a minimum of 99.97 percent controlled efficiency for 0.3 micron particles.

Both Exide and Quemetco use baghouses or filter systems to control particulate arsenic emissions from most all operations in the lead-acid battery recycling processes. Examples include arsenic emissions coming from the battery breaking areas and all smelting, refining, and casting operations.

### **Wet Scrubbers**

Wet scrubbers remove both particulate matter and gases from industrial process gas streams. In lead-acid battery recycling operations, wet scrubbers are typically used to remove residual metal particulates such as lead and arsenic, and sulfur oxides from the exhaust of baghouses that control emissions from rotary dryers and smelting furnaces. There are a variety of scrubber designs. However, only a limited number can remove small particulates from an exhaust stream. Wet scrubbers are capable of 98 percent collection efficiencies for particles as small as 5 microns in size. Two scrubbers designed to remove small particulates are the ionizing wet scrubber and the venturi scrubber.

In an ionizing wet scrubber, the gas stream first enters a chamber where a high voltage is used to ionize the gas stream. The second chamber is a wet scrubbing chamber, where the ionized particles and gases are attracted to the surface of the chamber and the scrubbing liquid. Larger size particles are removed by water through inertial impaction.

Venturi scrubbers are used by some facilities in the Basin. A venturi scrubber is another type of scrubber in which, the exhaust stream is passed through a constriction (the venturi) where the scrubbing liquid is sprayed in. The turbulence of the gases at and after the venturi promotes contact of particles with the scrubbing liquid droplets. High particulate matter removal efficiencies for small particles can be achieved with this type of scrubber. Exide currently uses a venturi scrubber.

### **Thermal Oxidizers**

Equipment commonly used to control VOC emissions are thermal oxidizers (also referred to as direct flame incinerators, regenerative thermal oxidizers, or afterburners). Thermal oxidizers effectively destroy VOCs and some particulate matter (commonly composed of soot) emissions by raising the temperature of the material above its auto-ignition point in the presence of oxygen and maintaining it at high temperature to complete combustion to carbon dioxide and water. Direct flame incinerators operate using a combustion chamber fired by a flame maintained by a combination of auxiliary fuel (e.g., natural gas), waste gas compounds, and supplemental air is added when necessary. Waste gases pass through the flame (at temperatures typically ranging from 1,200 to 2,000 degrees Fahrenheit), where it is heated to its combustion temperature. Regenerative thermal oxidizers (RTO) operate under a similar principle, but utilize heat transfer media (typically a porous ceramic material) to recover waste heat energy from the exhaust gas stream. This heat is typically used to preheat the incoming waste gases, thereby reducing the amount of supplemental fuel required to heat the gas stream to combustion temperatures. Thermal oxidizers are highly effective methods of destroying VOCs, with efficiencies up to 99.99 percent. Quemetco currently utilizes a regenerative thermal oxidizer to control toxic organic emissions from the feed drying process.

### **Electrostatic Precipitators/Wet Electrostatic Precipitators**

Electrostatic precipitators (ESPs) operate by charging the effluent particulate matter with a highly ionized gas stream and then attracting the charged particles to an oppositely charged metal wall. Typically, a cylindrical metal tube is used with an ionized wire running through it. As the ions move outward toward the oppositely charged cylinder, the particles are also ionized, and are deposited on the cylinder. The cylinder wall is periodically vibrated to collect particulate matter into a hopper (in a dry ESP). This technology can achieve 99 percent efficiency for total particulate matter as small as one micrometer. ESPs in lead-acid battery recycling operations are typically used downstream from other particulate controls such as baghouses, and treat exhaust streams with smaller arsenic particulates.

A wet ESP (hereinafter referred to as WESP) can be employed on gas streams that include oily and sticky particulates or gas streams that must be cooled to saturation in order to condense aerosols that were formerly in the gas phase. WESPs use a water flushing system to remove the particles from the collecting surface. The gas stream is either saturated before entering the collection area or the collecting surface is continually wetted to prevent large chunks of material from forming. Quemetco currently uses a five-cell WESP downstream of primary or secondary controls to further reduce their process emissions. In a previous Final Environmental Assessment for Rule 1420.1, staff analyzed Exide installing a ten-cell WESP that would control process emissions, however that WESP was never installed. The airflow from all process emissions at Exide is 220,000 cfm. In this project, the WESP would be installed only for the Feed Dryer which is 10,000 cfm. One WESP cell is capable of handling the airflow from the Feed Dryer. However, because the WESP cycles down periodically to flush particles, a second cell is necessary to ensure optimal control efficiency at all times. Therefore, this project will analyze the installation of a two-cell WESP.



## **Ambient Source Control Strategies for Lead**

### **Fugitive Lead-Dust Control**

Fugitive lead-dust at lead-acid battery recycling facilities can be a major source of lead emissions. Fugitive lead-dust accumulates in and around process areas, from lead point sources, on roof tops, in and around facility, and during maintenance operations to name a few. There are a variety of housekeeping and containment strategies that can be implemented to minimize fugitive lead dust. Housekeeping activities must be implemented frequently and properly to ensure they are effective. The concept behind many of these strategies is to either contain or remove lead dust so it cannot become airborne. Housekeeping practices specifying adequate frequencies and locations for all cleanings to be performed are also critical in the effectiveness to control fugitive lead-dust emissions. The following summarizes some potential fugitive lead dust control strategies:

- Pave roadways subject to vehicular and foot traffic;
- Clean paved areas through vacuuming, vacuum sweepers, and use of wet suppression;
- Wet wash or vacuum areas where lead particulate and accumulate such as roof tops, areas where lead-containing wastes are stored or disposed of;
- Clean (i.e. sweeping, vacuuming, dusting) areas where lead dust may accumulate due to accidents, process upsets or equipment malfunctions;
- Clean and rinse surface impoundments ponds before lead-containing sludge dries;
- Use enclosures or containment areas during maintenance activities or storage of lead-containing materials;
- Use total enclosures under negative air pressure vented to point lead point source controls to ensure that lead dust that accumulates in and around process areas does not become fugitive;
- Designate a vehicle wet washing station would be a designated vehicle wet washing area. The system would be capable of removing dust and other accumulated material from the wheels, body, and vehicle underside to prevent the inadvertent transfer of lead contaminated material to public roadways. All vehicles traversing facility areas associated with the lead-acid battery recycling process prior to exiting the facility and onsite mobile sweepers after operation, would be sufficiently washed. Ground surfaces where vehicles are washed would be required to be wet washed prior to the vehicle wet washed areas becoming dry to prevent any fugitive lead-dust or residue from becoming airborne. Practices that minimize the potential for further releases of lead emission when collecting and disposing of lead contaminated water accumulated during washing processes would be required. Practices would include the minimization of the amount of water which is allowed to dry exposed to the atmosphere prior to collection for treatment.

## **CHAPTER 2**

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**Introduction**

**General Information**

**Environmental Factors Potentially Affected**

**Determination**

**Discussion and Evaluation of Environmental Checklist**

**INTRODUCTION**

The environmental checklist provides a standard evaluation tool to identify a project's adverse environmental impacts. This checklist identifies and evaluates potential adverse environmental impacts that may be created by the proposed project.

**GENERAL INFORMATION**

Project Title:	Proposed Amended Rule 1420.1
Lead Agency Name:	South Coast Air Quality Management District
Lead Agency Address:	21865 Copley Drive, Diamond Bar, CA 91765
Rule Contact Person:	Michael Morris, (909) 396-3282
CEQA Contact Person:	Cynthia Carter, (909) 396-2431
Project Sponsor's Name:	South Coast Air Quality Management District
Project Sponsor's Address:	21865 Copley Drive, Diamond Bar, CA 91765
General Plan Designation:	Not applicable
Zoning:	Not applicable
Description of Project:	PAR 1420.1 would further protect public health by reducing lead emissions produced by large lead-acid battery recycling facilities. PAR 1420.1 would accomplish this by lowering the ambient lead concentration limit, imposing additional housekeeping, lowering the point source limit, and requiring daily monitoring. Owner/operators of affected facilities would be required to meet an interim ambient lead limit of 0.110 micrograms per cubic meter (ug/m <sup>3</sup> ) averaged over a <del>rolling</del> <u>any 30 consecutive</u> days <u>by effective</u> January 1, 2016. The limit would be further reduced to 0.100 ug/m <sup>3</sup> by January 1, 2017. Improvements to building enclosures and additional control equipment may be necessary to comply with the proposed ambient standard.
Surrounding Land Uses and Setting:	Large industrial/commercial facilities recycling lead-acid batteries
Other Public Agencies Whose Approval is Required:	Not applicable

**ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED**

The following environmental impact issues have been assessed to determine their potential to be affected by the proposed project. As indicated by the checklist on the following pages, environmental topics marked with an "✓" may be adversely affected by the proposed project. An explanation relative to the determination of the significance of the impacts can be found following the checklist for each area.

- |   |   |   |
|---|---|---|
| <input checked="" type="checkbox"/> Aesthetics  | <input type="checkbox"/> Geology and Soils                          | <input type="checkbox"/> Population and Housing           |
| <input type="checkbox"/> Agricultural Resources | <input checked="" type="checkbox"/> Hazards and Hazardous Materials | <input type="checkbox"/> Public Services                  |
| <input checked="" type="checkbox"/> Air Quality | <input checked="" type="checkbox"/> Hydrology and Water Quality     | <input type="checkbox"/> Recreation                       |
| <input type="checkbox"/> Biological Resources   | <input type="checkbox"/> Land Use and Planning                      | <input checked="" type="checkbox"/> Solid/Hazardous Waste |
| <input type="checkbox"/> Cultural Resources     | <input type="checkbox"/> Mineral Resources                          | <input type="checkbox"/> Transportation/Traffic           |
| <input checked="" type="checkbox"/> Energy      | <input checked="" type="checkbox"/> Noise                           | <input checked="" type="checkbox"/> Mandatory Findings    |

**DETERMINATION**

On the basis of this initial evaluation:

- I find the proposed project, in accordance with those findings made pursuant to CEQA Guideline §15252, COULD NOT have a significant effect on the environment, and that a SUSEQUENT ENVIRONMENTAL ASSESSMENT with no significant impacts has been prepared.
- I find that although the proposed project could have a significant effect on the environment, there will NOT be significant effects in this case because revisions in the project have been made by or agreed to by the project proponent. A SUBSEQUENT ENVIRONMENTAL ASSESSMENT with no significant impacts will be prepared.
- I find that the proposed project MAY have a significant effect(s) on the environment, and a SUBSEQUENT ENVIRONMENTAL ASSESSMENT will be prepared.
- I find that the proposed project MAY have a "potentially significant impact" on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. A SUBSEQUENT ENVIRONMENTAL ASSESSMENT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL ASSESSMENT pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL ASSESSMENT, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

**Date:** January 26, 2015

**Signature:**



Michael Krause  
Program Supervisor, CEQA Section  
Planning, Rules, and Area Sources

## **DISCUSSION AND EVALUATION OF ENVIRONMENTAL IMPACTS**

The objective of PAR 1420.1 is to further reduce the public's exposure to lead that is associated with lead emissions from large lead-acid recycling facilities. PAR 1420.1 is establishing additional and more stringent requirements for these facilities. One of the key components of PAR 1420.1 is reducing the lead point source and the ambient concentration limits (see Chapter 1- Project Description for a thorough discussion on the new proposed rule requirements). Based on existing lead point source tests and ambient monitoring data, Quemetco and Exide are already complying with the current rule's point source limit (0.045 lb/hr) and ambient concentration limit (0.150  $\mu\text{g}/\text{m}^3$ ). Furthermore, these facilities can also meet PAR 1420.1 (f)(1)(A) lower lead point source emission limits of 0.023 pounds per hour (see Table 2-10 for more details). Based on source testing, Quemetco and Exide have demonstrated they can achieve a lead point source emission rate less than 0.023 pound per hour. Additionally, Exide is in the process of installing further controls to reduce arsenic, benzene and 1,3 butadiene emissions but will concurrently further reduce lead emissions. The extent of the reductions will not be known until source tests are conducted to confirm the actual lead point source emission rates.

Based on ambient monitors at both facilities, year 2013 ambient lead concentrations data show potentially some excursions that exceed the proposed interim ambient lead concentration limit of 0.110  $\mu\text{g}/\text{m}^3$  and final ambient lead concentration limit of 0.100  $\mu\text{g}/\text{m}^3$ . In order to comply with the proposed ambient concentration limits, it is expected based on past monitoring data that both facilities need to do further actions to control lead emissions. PAR 1420.1 is not prescribing the sources or the pollution control technologies that the facilities must choose to implement to comply with the proposed limits. There are a variety of different housekeeping measures, engineering modifications, and air pollution control (APC) equipment scenarios that the facilities could use to achieve the proposed ambient lead emissions limits for PAR 1420.1. The facilities may utilize some or all of the scenarios to comply with the proposed limits.

Staff believes both facilities would need to control their fugitive dust emissions and it is reasonable to assume that Exide may also elect to further reduce point source emissions to comply with the proposed lead ambient concentration limit. For the purpose of the CEQA analysis, reasonable worst-case assumptions have been made: both facilities will need to control fugitive dust lead emissions from maintenance activities, and Exide will need to do some or all considered measures; such as enhanced housekeeping, total enclosure enhancements, installing a second wheel washer station, and installing a additional APC device (i.e. new WESP or third additional wet scrubber). For the purpose of analyzing potential environmental impacts, it is assumed that Exide will implement all lead control measures identified in Table 2-1, but may actually only need some of the measures to meet the ambient lead concentration limit. No construction is expected at Quemetco. See Table 2-1 for a summary of control measures. Although the facilities could potentially utilize unstated measures, that would be speculative at this time.

**Table 2-1 CEQA Summary of Fugitive Emissions Control Options**

Menu of Options to Reduce Fugitive Emissions	Action To Be Taken By:		Environmental Topics to be Analyzed:
	Exide	Quemetco	
Enhanced Measures During Maintenance Activities	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Air Quality, Hydrology & Water Quality
Enhanced Housekeeping Measures	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Air Quality, Energy, Hydrology & Water Quality, Population & Housing, Transportation
Enhancements to Total Enclosure	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Air Quality, Energy, Hydrology & Water Quality
Additional Wheel Washing Station	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Air Quality, Hydrology & Water Quality
Increased Maintenance of Baghouse	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Air Quality, Hazards & Hazardous Materials, Solid/Hazardous Waste
New Additional Air Pollution Control (Point Source)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Aesthetics, Air Quality, Energy, Hydrology & Water Quality, Noise, Hazards, Solids/Hazardous Waste

Exide is currently engaged in construction activities associated with the implementation of their Toxic Air Contaminant Reduction Project to install new and modified equipment that includes several APC devices. In addition to all of Exide’s existing air pollution control equipment and APCs under construction, Exide may also consider installing either a 10,000 cubic feet per minute (cfm) two cell new WESP or an additional new 10,000 cfm wet scrubber to provide additional control of the feed dryer’s lead emissions. Please note that installation of a WESP has been previously analyzed for the January 2014 PAR 1420.1 Final EA<sup>2</sup> and that the equipment was never installed. A smaller WESP is still considered as a viable APC option and the environmental effects of installing and operating a WESP will be analyzed in this ~~Draft~~ Final SEA.

No physical environmental changes are anticipated during monitoring, source testing, or reporting. PAR 1420.1 did not change the frequency of source testing, however, the threshold to source test once every two years is lower. Based on the both of the affected facilities’ point source emissions, it is not expected that PAR 1420.1 would change the frequency of source testing. Curtailment activities may benefit the environment, but at this time these types of activities are not quantifiable. PAR 1420.1 is also requiring additional reporting and recordkeeping. Because these rule requirements are administrative in nature, no environmental impacts would be expected.

<sup>2</sup> SCAQMD, PAR 1420.1 Final EA –January 2014. Available at: [http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2014/par\\_1420\\_fea.pdf?sfvrsn=0](http://www.aqmd.gov/docs/default-source/ceqa/documents/aqmd-projects/2014/par_1420_fea.pdf?sfvrsn=0)

## **ENVIRONMENTAL CHECKLIST AND DISCUSSION**

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**I. AESTHETICS.**

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**SIGNIFICANCE CRITERIA**

The proposed project impacts on aesthetics will be considered significant if:

- The project will block views from a scenic highway or corridor.
- The project will adversely affect the visual continuity of the surrounding area.
- The impacts on light and glare will be considered significant if the project adds lighting which would add glare to residential areas or sensitive receptors.

**DISCUSSION**

**I. a) & b)** Both facilities are located in industrial areas. See Figure 2-1 and Figure 2-2 for Quemetco and Exide, respectively.



Figure 2-1 Bird's Eye View of Quemetco

Both facilities will need to have a team to minimize their fugitive dust from quarterly maintenance activities (i.e. concrete/asphalt cutting, drilling, or soil grading). No aesthetics will be affected from these activities.

No construction is expected at Quemetco for PAR 1420.1 compliance. However, to comply with the proposed lower ambient limit, Exide may need to do some physical changes to their facility. Exide would potentially need to do building improvements, install a wheel washing station, install three new air monitors, 8 new vestibules/air curtains, modify their air handling systems and install a new APC device (either a WESP or third scrubber). All activities would occur on-site at Exide.

Exide is located in the City of Vernon's M-2 heavy industrial/warehousing zone and is within the Rendering Overly District. In addition to a large lead-acid battery recycling facility, this area also allows operations of rendering plants, fertilizer plants and junk/salvage yards. These industries are not located near scenic vistas, rock outcroppings, historical buildings or state scenic highways<sup>3</sup>. However, there are trees on the outside of the facility, but all of Exide's construction and operation activities are within the affected facility.

Installation of the new air pollution control equipment and supporting structures may require the construction of temporary enclosures or the use of a crane, which may be visible from outside of the facility. The enclosures and construction equipment would be temporary (i.e., taken offsite after construction is finished), and therefore, are not expected to permanently alter the visual character or quality of the site and its surroundings. In addition, the temporary enclosures would hide construction work and reduce visible construction emissions, which would reduce adverse aesthetic construction impacts.

The new APC equipment is expected to be similar in visual characteristics to the existing industrial setting at Exide. A wheel washing station is not expected to be visible from outside of the affected facility. Therefore, the proposed project would not affect views of the trees from outside of the affected facility and would not significantly affect scenic vistas or damage scenic resources.

**I. c)** No construction is expected at Quemetco from PAR 1420.1. The only physical changes to Exide would be the installation of a new APC and wheel washer station. Exide may consider a new scrubber or the installation of a WESP for the feed dryer's stack. However, because of space limitations, the new APC would need to be installed near the property boundary. This location could potentially be visible from the street, but would not change the existing visual character of the facility or the quality of the site and its surroundings. To make space for the new APC, an existing storm water retention pond would be removed and replaced with new storm water storage tanks, which would also be installed within the affected facility, but potentially could be visible from outside of the facility. However, the area is highly industrial, with rail staging areas, industrial storage, storage tanks and power lines that are visible from the streets in adjacent facilities; as well as stacks, ducting and power lines at the affected facility property currently visible from the streets. The installation of these either of a new APC may require the installation of additional ducting, blowers and other air handling support equipment. Therefore,

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<sup>3</sup> DTSC, Exide Corporation hazardous Waste Facility Permit Draft Environmental Impact Report, SCH No. 93051013, June 2006

while the WESP and additional equipment may be visible from outside of the affected property, it would not be inconsistent with the views seen at adjacent facilities. See Figure 2-2 for the existing visual characteristic of Exide's facility.



**Figure 2-2 Bird's Eye View of Exide**

Therefore, PAR 1420.1 would not add significant degradation to the existing visual character or quality of the site and its surroundings. On the contrary, with an additional APC, emissions from visible particulate matter would be reduced and could provide a beneficial visual character.

**I. d)** Both affected facilities are twenty-four hour operations. The facilities are also located in industrial areas that are zoned for continuous operation. No construction is expected at Quemetco from PAR 1420.1.

To comply with the proposed lower ambient limit, Exide may consider installing and operating a new APC device and associated support equipment 24 hours per day. In order to operate at night, additional lighting may be required on the outside of the new structures. The new lighting would be placed to illuminate the operations onsite and not directed off-site. As a result, any additional lighting is expected to be similar to the existing onsite lighting and the surrounding facilities. Therefore, PAR 1420.1 is not expected to create a new source of substantial light or glare which would significantly adversely affect day or nighttime views in the area beyond current conditions.

Based upon these considerations, significant adverse aesthetics impacts are not anticipated and will not be further analyzed in this Draft SEA. Since no significant aesthetics impacts were identified, no mitigation measures are necessary or required.

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**II. AGRICULTURE AND FOREST RESOURCES.**

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland mapping and Monitoring Program of the California Resources Agency, to non- agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code §12220(g)), timberland (as defined by Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code §51104 (g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Project-related impacts on agriculture and forest resources will be considered significant if any of the following conditions are met:

- The proposed project conflicts with existing zoning or agricultural use or Williamson Act contracts.
- The proposed project will convert prime farmland, unique farmland or farmland of statewide importance as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.
- The proposed project conflicts with existing zoning for, or causes rezoning of, forest land (as defined in Public Resources Code §12220(g)), timberland (as defined in Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code § 51104 (g)).
- The proposed project would involve changes in the existing environment, which due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use.

**DISCUSSION**

**II. a) & b)** In general, the affected facilities and surrounding industrial areas are not located on or near areas zoned for agricultural use, Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland mapping and Monitoring Program of the California Resources Agency. Therefore, the proposed project would not result in any construction of new buildings or other structures that would require converting farmland to non-agricultural use or conflict with zoning for agricultural use or a Williamson Act contract. Since the proposed project would not substantially change the facility or process at the facilities, there are no provisions in PAR 1420.1 that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments and no land use or planning requirements relative to agricultural resources would be altered by the proposed project.

**IV. c) & d)** The affected facilities are located in an industrial area in the urban portion of Los Angeles County that is not near forest land. Therefore, the proposed project is not expected to conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code §12220(g)), timberland (as defined by Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code §51104 (g)) or result in the loss of forest land or conversion of forest land to non-forest use.

Since PAR 1420.1 would not affect the placement of affected equipment near farmland, the proposed project is not expected to result in converting farmland to non-agricultural use; or conflict with existing zoning for agricultural use, or a Williamson Act contract. Similarly, it is not expected that PAR 1420.1 would conflict with existing zoning for, or cause rezoning of, forest land; or result in the loss of forest land or conversion of forest land to non-forest use. Consequently, the proposed project would not create any significant adverse agriculture or forestry impacts. Since no significant agriculture or forestry resources impacts were identified, this topic need not be evaluated further and no mitigation measures are necessary or required.

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**III. AIR QUALITY AND GREENHOUSE GAS EMISSIONS**

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Significance Criteria**

To determine whether or not air quality impacts from the proposed project may be significant, impacts will be evaluated and compared to the criteria in Table 2-2.

**Table 2-2 SCAQMD Air Quality Significance Thresholds**

<i>Mass Daily Thresholds<sup>a</sup></i>		
<b>Pollutant</b>	<b>Construction<sup>b</sup></b>	<b>Operation<sup>c</sup></b>
<b>NOx</b>	100 lbs/day	55 lbs/day
<b>VOC</b>	75 lbs/day	55 lbs/day
<b>PM10</b>	150 lbs/day	150 lbs/day
<b>PM2.5</b>	55 lbs/day	55 lbs/day
<b>SOx</b>	150 lbs/day	150 lbs/day
<b>CO</b>	550 lbs/day	550 lbs/day
<b>Lead</b>	3 lbs/day	3 lbs/day
<i>Toxic Air Contaminants (TACs), Odor, and GHG Thresholds</i>		
<b>TACs</b> (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk $\geq$ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas $\geq$ 1 in 1 million) Chronic & Acute Hazard Index $\geq$ 1.0 (project increment)	
<b>Odor</b>	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
<b>GHG</b>	10,000 MT/yr CO <sub>2</sub> eq for industrial facilities	
<i>Ambient Air Quality Standards for Criteria Pollutants<sup>d</sup></i>		
<b>NO<sub>2</sub></b> 1-hour average annual arithmetic mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 ppm (state) and 0.0534 ppm (federal)	
<b>PM<sub>10</sub></b> 24-hour average annual average	10.4 $\mu\text{g}/\text{m}^3$ (construction) <sup>e</sup> & 2.5 $\mu\text{g}/\text{m}^3$ (operation) 1.0 $\mu\text{g}/\text{m}^3$	
<b>PM<sub>2.5</sub></b> 24-hour average	10.4 $\mu\text{g}/\text{m}^3$ (construction) <sup>e</sup> & 2.5 $\mu\text{g}/\text{m}^3$ (operation)	
<b>SO<sub>2</sub></b> 1-hour average 24-hour average	0.25 ppm (state) & 0.075 ppm (federal – 99 <sup>th</sup> percentile) 0.04 ppm (state)	
<b>Sulfate</b> 24-hour average	25 $\mu\text{g}/\text{m}^3$ (state)	
<b>CO</b> 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)	
<b>Lead</b> 30-day Average Rolling 3-month average Quarterly average	1.5 $\mu\text{g}/\text{m}^3$ (state) 0.15 $\mu\text{g}/\text{m}^3$ (federal) 1.5 $\mu\text{g}/\text{m}^3$ (federal)	

<sup>a</sup> Source: SCAQMD CEQA Handbook (SCAQMD, 1993)

<sup>b</sup> Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea and Mojave Desert Air Basins).

<sup>c</sup> For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.

<sup>d</sup> Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.

<sup>e</sup> Ambient air quality threshold based on SCAQMD Rule 403.

KEY: lbs/day = pounds per day    ppm = parts per million     $\mu\text{g}/\text{m}^3$  = microgram per cubic meter     $\geq$  = greater than or equal to  
 MT/yr CO<sub>2</sub>eq = metric tons per year of CO<sub>2</sub> equivalents     $>$  = greater than



**DISCUSSION**

Staff evaluated the historical daily and the rolling 30-day average results for all monitors at both applicable facilities from 2008 until the present to determine an appropriate lead ambient concentration limit. The rolling 30-day average is calculated by determining the average over the 30 days prior to that particular day. Significant improvements have been made after the January 2012, when the ambient lead concentration limit was lowered from 1.5 to 0.150 µg/m<sup>3</sup>. Additional reductions in the ambient lead concentration limit were further lowered in 2013 as additional controls and measures were implemented. The tables below summarize the number of days in Year 2013 that exceeded the lead limits over 30-day rolling averages for Exide and Quemetco for their monitors and provides the average over all of their monitors.

**Table 2-3 Exide’s 2013<sup>1</sup> 30-Day Average Exceedances of Proposed Limits (days)**

Site Monitor	Rail	SE	SW	NE	OSN	MID
Days Exceeding 0.150 µg/m <sup>3</sup>	0	0	0	8	0	0
Days Exceeding 0.110 µg/m <sup>3</sup>	0	0	0	23	9	0
Days Exceeding 0.100 µg/m <sup>3</sup>	0	0	0	26	15	10

1. Excludes 9/16/13 through 12/31/13 due to DTSC activity

**Table 2-4 Quemetco’s 2013 30-Day Average Exceedances of Proposed Limits (days)**

Site Monitor	Site 1	Site 2	Site 4	Site 5
Days Exceeding 0.150 µg/m <sup>3</sup>	0	0	0	0
Days Exceeding 0.110 µg/m <sup>3</sup>	0	0	0	0
Days Exceeding 0.100 µg/m <sup>3</sup>	0	0	0	9

During the days that exceeded the proposed limits (Table 2-3 and Table 2-4) some days “spiked” or exceeded > 0.3 µg/m<sup>3</sup>. Tables 2-5 and 2-6 show the number of days the “spiking” did not occur. By controlling spikes (daily monitor readings greater than 0.300 µg/m<sup>3</sup>) and by through the implementing implementation of housekeeping and maintenance provisions; such as sweeping, watering and other dust abatement techniques prior to cutting or other soil disturbing activities, the measures prescribed in the proposed rule during cutting or other soil disturbing activities, and thorough cleaning afterwards, both sites can limit spikes from occurring. Based on 2013 ambient lead concentrations and if spikes are limited, both facilities can meet the proposed interim ambient lead concentration limit of 0.110 µg/m<sup>3</sup> and Quemetco can meet the proposed ambient lead concentration limit of 0.100 µg/m<sup>3</sup>. As discussed below, it is expected that Exide can also meet the 0.100 µg/ µg/m<sup>3</sup> with implementation of additional measures to further reduce lead emissions.

**Table 2-5 Exide’s 2013<sup>1</sup> 30-Day Average Exceedances of Proposed Limits (days) – No Spikes Above 0.300 µg/m<sup>3</sup>**

Site Monitor	Rail	SE	SW	NE	OSN	MID
Days Exceeding 0.110 µg/m <sup>3</sup>	0	0	0	0	0	0
Days Exceeding 0.100 µg/m <sup>3</sup>	0	0	0	21	7	10

1. Excludes 9/16/13 through 12/31/13 due to DTSC activity

**Table 2-6 Quemetco’s 2013 30-Day Average Exceedances of Proposed Limits (days) - No Spikes Above 0.300 µg/m<sup>3</sup>**

Site Monitor	Site 1	Site 2	Site 4	Site 5
Days Exceeding 0.110 µg/m <sup>3</sup>	0	0	0	0
Days Exceeding 0.100 µg/m <sup>3</sup>	0	0	0	3

As shown in Table 2-5, additional measures at Exide beyond controlling spikes will be needed to meet the 0.100 µg/m<sup>3</sup>. To meet the proposed ambient lead concentration limit of 0.100 µg/m<sup>3</sup>, improvements to housekeeping practices are likely necessary at Exide and there will likely also be a need for additional control equipment. Table 2-7 below summarizes potential control strategies that both facilities could implement to meet the 0.100 µg/m<sup>3</sup>. As shown in Table 2-7, it is expected that Exide and Quemetco will likely implement measures to eliminate spikes that could occur during specific maintenance activities. All other measures discussed in Table 2-7 will likely be implemented by Exide to ensure the facility can consistently meet the lower ambient lead concentration limit of 0.100 µg/m<sup>3</sup>.

The improvements analyzed were developed by staff based on review of source tests and ambient monitoring data, comparing housekeeping practices before and after 2013, and comparing practices between the two impacted facilities. Many of the improved practices are based on the respective facilities’ Rule 1420.1 Compliance Plans and dust mitigation measures. With the exception of the baghouses’ maintenance and potentially installing additional control equipment, the improvements focus on reducing fugitive emissions. Improved baghouse maintenance would help prevent equipment failures. Finally, the additional control on the Feed Dryer addresses the highest emitting point source at Exide, according to 2012 source test data.

**Table 2-7 CEQA Detailed Summary of Emissions Control Options**

Menu of Options to Reduce Fugitive Emissions	Description/Frequency	Action To Be Taken By:	
		Exide	Quemetco
Enhanced Measures During Maintenance Activities	<ul style="list-style-type: none"> <li>• During maintenance activities such as concrete/asphalt cutting, drilling, or soil grading, increase wash down areas as well as dusting, vacuuming and sweeping to minimize dust</li> <li>• 4 additional workers; 4 times/year</li> </ul>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Enhanced Housekeeping Measures ( <u>beyond the new proposed housekeeping requirement of PAR 1420.1 (h)</u> )	<ul style="list-style-type: none"> <li>• Implement existing housekeeping provisions more frequently or with better efficacy such as watering and street sweep to minimize dust created by vehicle and foot traffic</li> <li>• Wash, vacuum, and sweep inside and outside of building and parking area</li> <li>• 24 additional workers to implement enhanced daily housekeeping</li> </ul>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Enhancements to Total Enclosures	<ul style="list-style-type: none"> <li>• Seal roof on total enclosure</li> <li>• Install 8 – vestibules to improve maintenance of negative air pressure for doors and other openings, and</li> </ul>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Menu of Options to Reduce Fugitive Emissions	Description/Frequency	Action To Be Taken By:	
		Exide	Quemetco
	<ul style="list-style-type: none"> <li>• Install 8 – air curtains to improve maintenance of negative air pressure for loading and unloading areas and other openings where vestibules are not practicable</li> </ul>		
Additional Wheel Washing Station	1 additional station to water down vehicle wheels before exiting site/	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Increased Maintenance of Baghouse	Increase frequency of baghouse maintenance activities	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Additional Air Pollution Control (Point Source)	New two-cell WESP or additional scrubber	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The improvements for consideration were developed by staff based on review of source tests and ambient monitoring data, comparing housekeeping practices before and after 2013, and comparing practices between the two impacted facilities. Many of the improved practices are based on submitted Compliance Plans and dust mitigation measures. With the exception of bag house maintenance and potentially installing additional control equipment, the improvements focus on reducing fugitive emissions. Improved baghouse maintenance such as more frequent inspection and replacement of PTFE (Polytetrafluoroethylene) bags would help prevent equipment failures and ensures the bag house is operating properly. Finally, the additional air pollution control would likely be on the Feed Dryer and addresses the highest emitting point source at Exide, according to 2012 source test data. Based on the 2012 source test the feed dryer was approximately three times higher than the next highest lead emission point source. Since the 2012 source test, Exide has installed HEPA on the feed dryer which would reduce the lead emission rate. However, it is expected that the lead emission rate from the feed dryer would still be about two times higher than the next highest lead emission point source. Thus, it is reasonable foreseeable that Exide would likely further control the feed dryer to ensure compliance with the ambient lead concentration limit under PAR 1420.1. The CEQA analysis evaluates two air pollution control options that Exide can implement to further control lead emissions from the feed dryer, a two-cell WESP or a wet scrubber.

For the purpose of the CEQA analysis, reasonable worst-case assumptions have been made: both facilities will implement enhanced measures during maintenance activities, and Exide will need to do all considered measures such as enhanced housekeeping measures, enhancements to total enclosures, installing a wheel washer station, and installing an additional new APC device(s) to further reduce lead point source emissions (i.e. new two cell WESP or new additional wet scrubber). It is likely that both facilities would implement enhanced measures during maintenance activities to reduce spikes that can occur during these types of activities. It is the SCAQMD staff’s understanding, that Quemetco implements a number of enhanced housekeeping measures and generally uses more workers than Exide to implement these measures, thus no additional enhancements to housekeeping measures are assumed to occur at Quemetco. No construction is expected at Quemetco as their lead point source overall stack emission rate is less than 0.003 lb/hour.

**III. a)** The SCAQMD is required by law to prepare a comprehensive district-wide Air Quality Management Plan (AQMP) which includes strategies (e.g., control measures) to reduce emission levels to achieve and maintain state and federal ambient air quality standards, and to ensure that new sources of emissions are planned and operated to be consistent with the SCAQMD's air quality goals. The AQMP's air pollution reduction strategies include control measures which target stationary, area, mobile and indirect sources. These control measures are based on feasible methods of attaining ambient air quality standards. Pursuant to the provisions of both the state and federal Clean Air Acts (CAA)s, the SCAQMD is required to attain the state and federal ambient air quality standards for all criteria pollutants, including lead. PAR 1420.1 would not obstruct or conflict with the implementation of the AQMP because lead emission reductions are in addition to emission reductions in the AQMP. The SCAQMD adopted the 2012 Lead State Implementation Plan (SIP) for Los Angeles County on May 4, 2012, which relies upon Rule 1420.1 for lead emission reductions. Further, on November 5, 2010, the Governing Board approved the 2010 Clean Communities Plan (CCP). The CCP is an update to the 2000 Air Toxics Control Plan (ATCP)<sup>4</sup> and its 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. The elements of the 2010 CCP are community exposure reduction, community participation, communication and outreach, agency coordination, monitoring and compliance, source-specific programs, and nuisance.

PAR 1420.1 would reduce lead emissions and therefore, be consistent with the goals of the AQMP, 2012 Lead SIP for Los Angeles County, and the 2010 CCP. Therefore, implementing PAR 1420.1 that further reduces lead emissions would not conflict or obstruct implementation of the 2012 Lead SIP for Los Angeles County, AQMP or 2010 CCP.

### **III. b) and f) *Criteria Pollutants***

#### ***Construction Impacts***

##### **New Affected Facilities**

SCAQMD staff is not aware of any new large lead recycling facilities planned to be constructed in the future. So the focus of the analysis will be on the two known affected facilities. Construction related to PAR 1420.1 at new facilities would be similar to construction of structures to support the new large lead recycling processes. The same construction equipment used to build the facility is expected to build enclosures and control equipment at new facilities. However, at this time, construction of new large lead recycling facilities is considered speculative according to CEQA Guidelines §15145 and will not be evaluated further in this analysis.

##### **Quemetco**

Quemetco may implement additional measures to ensure lead dust is well controlled during specific maintenance activities to reduce potential emission spikes during activities such as concrete/asphalt cutting, drilling, or soil grading by increasing wash down areas as well as dusting, vacuuming, and sweeping to minimize lead dust. As previously discussed, Quemetco implements enhanced housekeeping, their lead point sources are less than ~~0.003-lb/hour~~ the

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<sup>4</sup> SCAQMD Air Toxics Control Plan: <http://www.aqmd.gov/home/library/clean-air-plans/clean-communities-plan/air-toxics-control-plan>

proposed lower limit of 0.023 lb/hr, therefore, it is reasonably foreseeable that no construction activities will occur at Quemento as part of PAR 1420.1.

### **Exide**

As discussed, there are two air pollution control devices strategies that could be implemented to further control lead emissions from the feed dryer. Staff has identified two potential air pollution control device options to control lead emissions from the feed dryer: a two-cell WESP or a venturi and tray type wet scrubber. It is expected that Exide would likely choose the wet scrubber over the WESP because the facility is currently using this type of air pollution control system and it is a lower cost option. However, for completeness of the analysis, this Environmental Assessment includes both control options to ensure that environmental impacts from either option are fully analyzed.

The January 2014 PAR 1420.1 Final EA evaluated the potential impacts of installation of a 10 cell WESP. This present EA evaluates a two-cell WESP, but assumes (similar to the January 2014 Final EA) that the two-cell WESP would be installed outside near the building (current location of a storm water retention pond). As such, the existing storm water retention pond would be removed and replaced with new storage tanks. These tanks would also be placed within the affected facility's property. At Exide, the new scrubber could be placed either inside or outside their enclosed building. The approximate size of the scrubber would be approximately 5 feet in diameter and 15 feet in height. Regardless of where the scrubber is placed, it would be on existing paved surface where construction impacts are the installation of the scrubber. The installation of either new APC may require the installation of additional ducting, blowers and other air handling support equipment.

Exide is expected to control its fugitive dust from enhanced measures during maintenance activities, enhanced housekeeping measures, enhancements to total enclosures, additional wheel washer station, and additional air pollution controls in order to comply with the proposed lead ambient concentration limit. No construction impacts are expected from installation of an additional wheel washer station as these systems are prefabricated and installed on flat paved surfaces. Enhancements to the total enclosure such as implementing housekeeping provisions specified under paragraph PAR 1420.1 (h)(2) more frequently to inspect and ensure that the total enclosure is free of gaps, breaks, separations, leak points or other possible routes for emissions of lead or fugitive lead-dust can escape to ambient air will not result in construction impacts. Installation of vestibules will require some construction, but no physical modifications to the total enclosure would be needed as the prefabricated vestibules can be added to the existing structure. Regarding the additional APC devices, Exide could elect to install a WESP or an additional wet scrubber to further control lead point sources. Either APC will require construction. Installation of a two-cell WESP will require more construction as it is assumed it would be located on the containment pond, similar to the analysis done in the January 2014 PAR 1420.1 Final EA. Construction impacts from both a WESP and wet scrubber are presented in this Environmental Assessment to show the potential environmental impacts from either control option.

Exide is expected to install 3 new air monitors to ensure that they can comply with the daily monitoring requirement. Additional monitors would be side by side existing monitors. Since these monitors would be side by side existing monitors, any electrical needs would already be

met such that no additional construction impacts would be expected. Air monitors are placed on two meter height platforms that are two feet wide by eight feet long. Other than placing the monitors on the platforms, air monitors do not require construction. Therefore, no construction emissions are associated with the air monitors. The delivery of the air monitors would be less than the construction's peak day emissions.

### **Exide's Construction for Air Pollution Control Equipment**

Based on previous source tests, one area where additional controls may be installed to ensure compliance with the 0.100 ug/m<sup>3</sup> ambient lead concentration limit would be to further control lead emissions from the feed dryer. SCAQMD staff has identified two control options: 2-cell WESP or wet scrubber. It is possible that because a 2-cell WESP would require less space than a 5-cell WESP that it could be placed in another location other than the storm water pond where excavation, fill, and paving would not be necessary. As a conservative assumption and similar to the January 2014 PAR 1420.1 Final EA, it is assumed that a 2-cell WESP would be placed on the storm water retention pond.

Construction of a 2-cell WESP is expected to occur in four phases: demolition/excavation, fill, paving and building of the structure. Construction of a scrubber is expected to occur in two phases: paving and building structure. All the construction phases for either control option will take place on site and will generally need to be completed before moving on to the next phase. No demolition of existing structures for the WESP is expected for the new additional APC because the new equipment will be placed either at an empty area or storm water pond.

Due to compliance issues and as a result of an action brought by the SCAQMD in front of the SCAQMD Hearing Board, Exide prepared a Mitigation Plan for Construction of Risk Reduction Measures, RCRA RFI Sampling, and Other Plant Activities (hereinafter referred to as Construction and Activity Mitigation Plan) dated July 2014 (See Appendix C of Exide's Toxic Reduction Project<sup>5</sup>). The Construction and Activity Mitigation Plan was incorporated into an Order for Abatement (Case No. 3151-32) which was issued and made enforceable by the SCAQMD Hearing Board on July 10, 2014, pursuant to Health and Safety Code section 42451(b). The plan details how Exide will control fugitive metal TAC dust during construction and other plant activities. The goal of the Construction and Activity Mitigation Plan is to exceed SCAQMD regulatory requirements to prevent emissions of lead and other toxic metals during any construction and maintenance activity occurring onsite.

Construction emissions were estimated for the various construction phases for the two control options as discussed below: demolish, excavate the ground, In addition, criteria pollutant emissions were calculated for all on-road vehicles transporting workers, vendors, and material removal and delivery. Since all phases must be entirely completed before the next phase can commence, there would be no overlap of construction phases for the construction of the new APC.

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<sup>5</sup> Exide's Toxic Reduction Project: [http://www.aqmd.gov/docs/default-source/exide/id-124838-exide-mnd\\_final-\(1\).pdf?sfvrsn=4](http://www.aqmd.gov/docs/default-source/exide/id-124838-exide-mnd_final-(1).pdf?sfvrsn=4)

***Demolition/Excavation Phase***

The demolition and excavation phase would involve the excavation of the storm water pond for installation of a 2-cell WESP or flooring for a new foundation for an additional wet scrubber. Demolition/excavation for a foundation for a wet scrubber is assumed to include removing a 10 foot by 10 foot section of concrete with a soil depth of two feet. For either APC control options, demolition would involve cranes, saws and loaders. It is assumed that under either control approach, the same equipment would be used on a daily basis; however, demolition/excavation of the surface pond would occur over a longer period of time.

Soil beneath the Exide facility is contaminated with metals, primarily arsenic and lead. Trichloroethylene (TCE), Tetrachloroethylene (PCE), and other volatile organic compounds (VOCs) also have been identified in soils and groundwater beneath the facility. The proposed project may include removing some ground soil/concrete and installing new foundations; hence, some earthwork is expected. Rule 1420.1 includes requirements for maintenance activities, which would include removal of ground pavement, concrete or asphalt associated with the proposed project. Specifically, it requires that the activity must be conducted in a partial enclosure using wet suppression, requires increased sampling and restricts construction during high wind conditions. These provisions will control fugitive dust.

The concrete and soil would be considered hazardous waste and the facility owner/operators have stated that the debris would be sent to US Ecology Beatty Facility, Beatty Nevada. Based on a capacity of 30 cubic yards per haul truck, seventeen haul truck trips would be required to haul the concrete and soil debris for demolition of the surface retention and 17 haul truck trips would be required to haul concrete and soil debris for demolition for installation of a new foundation for a scrubber. The distance traveled by haul trucks within SCAQMD jurisdiction (distance from the affected facility to Castaic) is approximately 68 miles one-way. The distance traveled by haul trucks within MDAQMD jurisdiction (distance from the Castaic to Nevada) is approximately 191 miles one-way. Emissions calculations for vehicle trips were based on two-way trips.

However, to ensure that all emissions were identified, it was assumed that that the demolished material/soil was contaminated and sent to either to the Chemical Waste Management Kettleman Hills Landfill or the Clean Harbors Buttonwillow Landfill for treatment and disposal. In either case, 17 haul trucks transporting contaminated material/ soil would travel from the facility to the district boundary at the I-5 freeway.

***Fill Phase***

The fill phase would involve the filling of the flooring with any soil needed to balance the area before paving. Backhoes would be used during the fill phase. The fill phase would occur for filling the surface retention pond and only for the 2-cell WESP.



***Paving Phase***

The paving phase would involve the pouring of concrete for the new foundations for the new APC and any footings needed for either the 2-cell WESP or scrubber. Concrete mixers would be used during this phase. For either a 2-cell WESP or scrubber control approach, the same equipment would be used on a daily basis, however, paving phase of the surface pond would occur over a longer period of time.

***Structure Construction Phase***

The structure construction phase would include the installation of air pollution control equipment for either a 2-cell WESP or scrubber. Because the equipment would arrive on-site pre-manufactured, the construction impacts are from the delivery of the equipment and operation of a crane to install them. Also, loaders and forklifts are expected to be used during this phase.

The construction phases would be completed in the order described above because of logistics and cannot overlap. The excavation of the existing flooring is necessary before the new foundation and equipment is installed. The demolition areas may need to be filled with soil to balance the area before the new foundation and footings are poured for the new equipment. The structure construction phase can only be started after the foundations and footings are set. For example, the flooring would need to be demolished before being repaved. The paving will need to be cured before the equipment is installed.

Construction emission estimates included construction equipment used during the phase (e.g., paver during paving) and on-road vehicles transporting workers, vendors, and material removal and delivery (see APPENDIX B). Daily construction criteria pollutant emissions from the proposed project are presented in Table 2-8. The 2014 Final EA for Rule 1420.1 assumed as a worst-case scenario that the storm water retention pond would need to be removed to install a wet ESP. Hence, all the proposed project elements were considered in the daily construction emissions. Because the construction phases do not overlap, the daily emissions are not additive.

Construction emissions are presented in Table 2-8 below for all phases of construction of a 2-cell WESP which includes demolition/excavation, fill phase, paving, and structure construction and all phases of construction for a scrubber which includes demolition/excavation, paving and structure construction. The daily emissions from demolition/excavation, paving and structure construction emissions from either installation of a 2-cell WESP or scrubber are the same for both control approaches. The peak daily emissions vary for each pollutant depending on the construction phase. Peak daily emissions are the highest for CO and NO<sub>x</sub> for the demolition/excavation phase and are the highest for PM<sub>10</sub>, PM<sub>2.5</sub>, VOC and SO<sub>x</sub> for the fill phase of construction. The significance determination for the construction is based on the peak daily emissions during any construction phase, and as previously discussed construction phases do not overlap. Therefore, all of the construction impacts from the project are not significant for criteria pollutant emissions.



**Table 2-8 PAR 1420.1 Daily Construction Emissions in SCAQMD<sup>1</sup>**

Construction Phase	CO, lb/day	NO <sub>x</sub> , lb/day	PM <sub>10</sub> , lb/day	PM <sub>2.5</sub> , lb/day	VOC, lb/day	SO <sub>x</sub> , lb/day
Demolition/Excavation <sup>2</sup>	24	50	3.2	2.2	4.4	0.04
Fill Phase <sup>3</sup>	28	73	7.5	3.4	6.4	0.1
Paving <sup>2</sup>	19	29	1.8	1.6	1.1	0.02
Structure Construction Phase <sup>2</sup>	16	36	1.6	1.4	3.7	0.1
Significance Threshold, lb/day	550	100	150	55	75	150
Exceed Significance?	No	No	No	No	No	No

<sup>1</sup> It is likely that Exide would likely select either a 2-cell WESP or wet scrubber, so construction emissions are not additive for the two control options. Construction phases do not overlap. Significance determination is based on peak daily emissions of CO and NO<sub>x</sub> for the demolition phase and PM<sub>10</sub>, PM<sub>2.5</sub>, VOC, and SO<sub>x</sub> for the fill phase of construction.

<sup>2</sup> Demolition/excavation, paving and structure construction phase for both installation of a 2-cell WESP and a scrubber.

<sup>3</sup> Fill phase occurs for installation of a 2-cell WESP.

Hauling contaminated demolished material/soil found during demolition of the existing storm water retention pond or for installing a concrete pad would be the only construction phase that may generate criteria pollutant emissions outside of the District. Haul trucks transporting contaminated soil would travel up the I-5 through the San Joaquin Valley Air Pollution Control District's (SJVAPD's) jurisdiction. The number of trips by haul trucks from PAR 1420.1 related construction in SJVAPD's jurisdiction would be substantially less than the 1,506 trips per day threshold from industrial projects that would require quantifying emissions in accordance with the SJVAPD's Small Project Analysis Level Guidance Document ([http://www.valleyair.org/transportation/CEQA%20Rules/ SPALTables61912.pdf](http://www.valleyair.org/transportation/CEQA%20Rules/SPALTables61912.pdf)). Therefore, it is determined that construction related criteria pollutant emissions in the SJVAPD's jurisdiction would be less than significant for adverse construction air quality impacts in accordance with the standards and significance thresholds of that area.

A wheel washer is a prefabricated device designed to spray high pressure water onto the wheels of vehicles. The water pumps are electrical and the water is re-circulated. The equipment is delivered and installed on site without the need for additional construction. The same scenario goes for the vestibules. The vestibules are prefabricated devices and do not require construction equipment for installation. The only installation equipment needed to install the wheel washer and vestibules would be electric power tools. Minor emissions from welding may be generated by installing the wheel washer and vestibules. Emissions from welding are expected to be infrequent and less than significant. The housekeeping and maintenance activities also do not need construction. Hence, the wheel washer, installation of vestibules, and housekeeping activities will not result in construction emissions impacts.

### Localized Significance Thresholds for Construction

The localized significance threshold (LST) methodology was developed to be used as a tool to assist lead agencies to analyze localized impacts associated with proposed projects. The LST methodology and associated mass rates are not designed to evaluate localized impacts from mobile sources traveling over the roadways. LST lookup tables for one, two and five acre proposed projects emitting CO, NO<sub>x</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub> were prepared for easy reference according to source receptor area.

The Exide facility is located in Source Receptor Area (SRA) 1 – Central Los Angeles. The proposed construction area is approximately one acre in area, except for the stack and associated stack support structure, and ducting; these will be enclosed within existing structures on-site. The furnace building is on the eastern side of the Exide facility along Indiana Street. The receptor distance between the building edge and the facility across the street is less than 25 meters. As discussed earlier, the end of one phase of construction cannot overlap with the beginning of the next phase. On-site construction emissions and the one-acre LST significant thresholds for SRA 1 are presented in Table 2-9. Detailed construction emissions assumptions and calculations are presented in Appendix B. Since the emissions are below the one-acre LST significant thresholds for SRA 1, the proposed project is not expected generate construction criteria pollutant emissions that significantly impact sensitive receptors.

The Draft SEA inadvertently listed the total daily construction on-site and off-site emissions in Table 2-9, instead of the onsite construction emissions. However, the correct numbers were included in Appendix B of the Draft SEA and are now accurately listed in Table 2-9.

**Table 2-9 Proposed Project Daily On-site Construction Emissions LST**

Description	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day
Demolition/Excavation Phase	24 <u>20</u>	50 <u>32</u>	3.2 <u>3.8</u>	2.2 <u>2.0</u>
Fill Phase	28 <u>21</u>	73 <u>40</u>	7.5 <u>3.7</u>	3.4 <u>2.0</u>
Paving Phase	49 <u>16</u>	29 <u>24</u>	1.8 <u>1.7</u>	1.6 <u>1.5</u>
Structure Construction Phase	16 <u>14</u>	36 <u>24</u>	1.6 <u>1.3</u>	1.4 <u>1.2</u>
Localized Significance Threshold at <del>100</del> <u>25</u> meters	680	74	5.0	3.0
Exceed Significance?	NO	NO	NO	NO

The end of one phase of construction cannot overlap with the beginning of the next phase.

**Operational Impacts**

The operation of the control equipment will reduce toxic exposure and will assist in meeting the lower proposed limits. As shown in Table 2-10, the lower point source limit is already being met by both facilities.

**Table 2-10 Lead Point Source Test Results**

	Facility	
	Quemetco <sup>6</sup>	Exide <sup>7</sup>
Lead Point Source Emission Rate (lb/hr)	0.000341	0.02106
PAR 1420.1 New Point Source Limit (lb/hr)	0.023	0.023
Compliance with New Limit?	Yes	Yes

<sup>6</sup> Quemetco Source Test Results, 2/2014

<sup>7</sup> Exide Source Test Results, 2010 and 2012

For implementation of additional measures during maintenance activities and enhanced housekeeping provisions where measures are implemented more frequently or with greater efficacy, additional employees may be needed. SCAQMD staff has estimated that during maintenance activities, four additional employees would be needed quarterly at both facilities, for a total of eight maintenance-related employees. For enhanced housekeeping provisions, three crews of eight, or 24 employees, would be needed at Exide. Total maximum additional employment would be 32 and it is assumed that an additional 32 vehicle trips could occur from enhanced maintenance and housekeeping provisions.

## **Exide**

### **New APC Operation**

The modified air handling systems and either new APC device (wet scrubber or new 2-cell WESP) may be needed to comply with the ambient lead concentration limit under PAR 1420.1, but are not expected to generate criteria pollutants. The modified air handling systems and air pollution control equipment is expected to be powered by electricity, so no new combustion emissions would be generated. Modifications to the air handling system and operation of a new APC device would reduce lead emissions. The affected facility currently sends operational hazardous waste to the Allied Waste La Paz County Landfill in Arizona. No additional haul trips are expected because the captured lead gets recycled in their process.

### **Housekeeping Operations**

None of the housekeeping operations are expected to directly increase criteria, toxic or greenhouse gas emissions. Secondary criteria emissions may increase from the additional vehicle sweeping and employee vehicle emissions as shown in Table 2-11. Exide is expected to double their diesel vehicle sweeping. Diesel use was estimated for the three extra sweeping events per day that would be required at the affected facility that currently only swept three times per day. Diesel use was estimated assuming that sweepers would be nine feet wide, sweep over the entire outside area around the production site (i.e., not around administrative buildings) three times a day with two feet of overlap on the return path as the sweepers travel back and forth. Assuming a ten mile per gallon of diesel fuel efficiency approximately 2.1 gallons of diesel would be consumed on a peak day. Since the additional sweeping is only expected to require 65 gallons more fuel per year, no additional diesel fuel delivery is expected, so there would be no additional diesel fuel use from diesel fuel delivery.

The criteria emissions from operation would be less than the SCAQMD's mass daily operational significance thresholds; therefore, PAR 1420.1 is not expected to result in significant adverse operational criteria pollutant emission impacts.

**Table 2-11 SCAQMD Operational Criteria Pollutant Emissions**

Description	CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	VOC	SO <sub>x</sub>
	(lb/day)					
Heavy Duty Sweeper	0.5	2.3	0.068	0.048	0.10	0.0046
32 Employee Vehicle Trips for Enhanced Maintenance and Housekeeping	5.28	0.437	.13	0.06	0.58	0.01
<b>Total Operational Emissions</b>	<b>5.8</b>	<b>2.7</b>	<b>0.2</b>	<b>0.1</b>	<b>0.7</b>	<b>0.02</b>
Significance Threshold	550	55	150	55	75	150
Exceed Significance?	No	No	No	No	No	No

### **Indirect Criteria Pollutant Emissions from Electricity Consumption**

Indirect criteria pollutant and GHG emissions are expected from the generation of electricity to operate new equipment that occurs off-site at electricity generating facilities (EGFs). Emissions from electricity generating facilities are already evaluated in the CEQA documents for those projects when they are built or modified. The analysis in the Draft SEA (Section VI. Energy b), c) and d)) demonstrates that there is sufficient capacity from power providers for the increased electricity consumption from PAR 1420.1. Since both affected facilities are in the Regional Clean Air Incentives Market (RECLAIM) Program that regulates NO<sub>x</sub> and SO<sub>x</sub> emissions from EGFs. Under the RECLAIM program, EGFs were provided annual allocations of NO<sub>x</sub> and SO<sub>x</sub> emissions that decline annually. For this reason, emissions that may be created from EGFs providing electricity specifically for the proposed project would not increase regional NO<sub>x</sub> and SO<sub>x</sub> emissions, since the overall NO<sub>x</sub> and SO<sub>x</sub> emissions generated by EGFs would need to remain within the existing regional annual NO<sub>x</sub> and SO<sub>x</sub> allocations under the RECLAIM program. Lastly, because the NO<sub>x</sub> and SO<sub>x</sub> emissions are limited by the annual RECLAIM allocations, the other criteria pollutants that may be generated from combustion activities associated with electricity generation (e.g., CO, VOC, PM<sub>10</sub>, and PM<sub>2.5</sub>) are also limited by stoichiometry. Since both affected facilities would be required to offset any potential NO<sub>x</sub> emission increases under the RECLAIM program, any increase in NO<sub>x</sub> emission as a result of PAR 1420.1 will be mitigated to less than significant.

### **III. c) Cumulatively Considerable Impacts**

Based on the foregoing analysis, criteria pollutant project-specific air quality impacts from implementing PAR 1420.1 would not exceed air quality significance thresholds (Table 2-2), cumulative impacts are not expected to be significant for air quality. SCAQMD cumulatively significance thresholds are the same as project-specific significance thresholds. Therefore, potential adverse impacts from implementing PAR 1420.1 would not be "cumulatively considerable" as defined by CEQA Guidelines §15064(h)(1) for air quality impacts. Per CEQA Guidelines §15064(h)(4), the mere existing of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulative considerable.

The SCAQMD guidance on addressing cumulative impacts for air quality is as follows: "As Lead Agency, the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or

EIR.” “Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant.”<sup>8</sup>

This approach was upheld by the Court in *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal. App. 4th 327, 334. The Court determined that where it can be found that a project did not exceed the South Coast Air Quality Management District’s established air quality significance thresholds, the City of Chula Vista properly concluded that the project would not cause a significant environmental effect, nor result in a cumulatively considerable increase in these pollutants. The court found this determination to be consistent with CEQA Guidelines §15064.7, stating, “The lead agency may rely on a threshold of significance standard to determine whether a project will cause a significant environmental effect.” The court found that, “Although the project will contribute additional air pollutants to an existing nonattainment area, these increases are below the significance criteria...” “Thus, we conclude that no fair argument exists that the Project will cause a significant unavoidable cumulative contribution to an air quality impact.” As in *Chula Vista*, here the District has demonstrated, when using accurate and appropriate data and assumptions, that the project will not exceed the established South Coast Air Quality Management District significance thresholds. See also, *Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal. App. 4th 899. Here again the court upheld the South Coast Air Quality Management District’s approach to utilizing the established air quality significance thresholds to determine whether the impacts of a project would be cumulatively considerable. Thus, it may be concluded that the Project will not cause a significant unavoidable cumulative contribution to an air quality impact.

Based on the foregoing analysis, project-specific air quality impacts from implementing the proposed project would not exceed air quality significance thresholds (Table 2-1); therefore, based on the above discussion, cumulative impacts are not expected to be significant for air quality. Therefore, potential adverse impacts from the proposed project would not be "cumulatively considerable" as defined by CEQA Guidelines §15064(h)(1) for air quality impacts. Per CEQA Guidelines §15064(h)(4), the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project’s incremental effects are cumulative considerable.

### **III. d) Toxic Air Contaminants (TAC)**

#### ***Exide’s Construction***

Construction is only expected at Exide. Construction TAC emissions may be generated from two sources: diesel exhaust emissions (i.e. heavy-duty trucks and construction equipment) and from the disturbance of contaminated soil.

Diesel exhaust particulate is considered a carcinogenic and chronic TAC. Construction is estimated to last less than two years during which time diesel exhaust from the construction equipment and its corresponding adverse health impacts will affect the surrounding local

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<sup>8</sup> SCAQMD Cumulative Impacts Working Group White Paper on Potential Control Strategies to Address Cumulative Impacts From Air Pollution, August 2003, Appendix D, Cumulative Impact Analysis Requirements Pursuant to CEQA, at D-3, <http://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/cumulative-impacts-working-group/cumulative-impacts-white-paper-appendix.pdf?sfvrsn=4>.

community. However, the Exide facility is subject to a stringent Construction Activity Mitigation Plan that requires active monitoring and abatement of work activities. The Plan requires construction activities within the building to be conducted under negative pressure so exhaust is not emitted externally. In addition, required wet methods will reduce the generation of dust from all aspects of the construction phase and the extensive measures will also assist in restricting the exposure to diesel exhaust from the off-road equipment. Using the latest fleet mix of off-road equipment will reduce criteria pollutant and toxic emissions as newer equipment are subject to more stringent CARB regulations. Finally, carcinogenic health risk to sensitive receptors is calculated based on a 70-year exposure and to off-site workers for a 40-year exposure period and the construction period will be less than two years reducing the risk in magnitudes.

Exide's facility has previously been identified with soil contamination from metals (primarily arsenic and lead). Trichloroethylene (TCE), tetrachloroethylene (PCE) and other volatile organic compounds (VOCs) contamination were also identified in some soil areas. A soil vapor extraction (SVE) system was installed to remediate TCE, PCE and VOCs from the soil. With the exception of potentially replacing the storm water retention pond with storm water storage tanks to provide room for the new APC, no other excavation is expected. If soil contamination were found during construction, it would likely be during the demolition phase. If contaminated soil were found during construction, construction would be stopped and additional testing would be done to determine the type and extent of contamination. Exide currently has a legal obligation to follow proper procedures to handle and dispose their contaminated soil. See their 2014 SCAQMD Mitigation Monitoring Plan<sup>9</sup> for more details.

The existing Rule 1420.1 contains requirements for maintenance activity in subsection (i), which includes (c)(17)(e) resurfacing, repair, or removal of ground, pavement, concrete or asphalt. The maintenance requirements in subsection state:

- 1) Beginning November 5, 2010, the owner or operator of a large lead-acid battery recycling facility shall conduct any maintenance activity in a negative air containment enclosure, vented to a permitted negative air machine equipped with a filter(s) rated by the manufacturer to achieve a 99.97% capture efficiency for 0.3 micron particles, that encloses all affected areas where fugitive lead-dust generation potential exists, unless located within a total enclosure or approved by the Executive Officer. Any maintenance activity that cannot be conducted in a negative air containment enclosure due to physical constraints, limited accessibility, or safety issues when constructing or operating the enclosure shall be conducted:
  - (A) In a partial enclosure, barring conditions posing physical constraints, limited accessibility, or safety issues;
  - (B) Using wet suppression or a vacuum equipped with a filter(s) rated by the manufacturer to achieve a 99.97% capture efficiency for 0.3 micron particles, at locations where the potential to generate fugitive lead-dust exists prior to conducting and upon completion of the maintenance activity. Wet suppression or vacuuming shall also be conducted during the maintenance activity barring safety issues;
  - (C) While collecting 24-hour samples at monitors for every day that maintenance activity is occurring notwithstanding paragraph (j)(2); and

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<sup>9</sup> [http://www.aqmd.gov/docs/default-source/ceqa/documents/permit-projects/2014/exide-mmp\\_final.pdf?sfvrsn=2](http://www.aqmd.gov/docs/default-source/ceqa/documents/permit-projects/2014/exide-mmp_final.pdf?sfvrsn=2)

- (D) Shall be stopped immediately when instantaneous wind speeds are > 25 mph. Maintenance work may be continued if it is necessary to prevent the release of lead emissions.

Therefore, based on the requirements of existing of Rule 1420.1 for maintenance activities, which would not be altered by the propose project, adverse lead or arsenic emission impacts from contaminated soil during construction are not expected.

If soil is contaminated with VOC (including TACs that are VOC), the facility owners/operators would be required to prepare a SCAQMD Rule 1166 VOC Contaminated Soil Mitigation Plan. The mitigation plan would require that VOC emissions from the contaminated soil be minimized. Because demolition is expected to last less than a month and a SCAQMD Rule 1166 VOC Contaminated Soil Mitigation Plan would be required to be followed if VOC contaminated soil is found, significant adverse impacts from VOC TAC emissions associated with contaminated soil are also not expected.

Therefore, based on the previous discussion, PAR 1420.1 is not expected to generate significant adverse TAC impacts from construction.

### **Operations**

#### **Secondary Health Risk Impacts from PAR 1420.1**

Exide's operation of their modified air handling systems and the new APC device may be needed to comply with PAR 1420.1 are not expected to generate any TAC emissions. Because they are operated using electricity and any emissions remaining after control will be less than the emissions from that source before the additional control (baseline emissions).

Based on the above discussion PAR 1420.1 is not expected be significant for exposing sensitive receptors to substantial concentrations.

### **III. e) Odor Impacts**

Construction is expected to occur on-site at Exide. Also, the affected facility is an industrial facility where heavy-duty diesel equipment (sweepers) and trucks already operate. Therefore, the addition of several pieces of construction equipment and haul trucks are not expected to generate diesel exhaust odor greater than what is already present.

Operation of the modified air handling system and new APC are not expected to generate any new odors. Neither a scrubber or a new WESP would include a new combustion system and both would be designed to reduce TAC emissions from large lead battery recycling operations, which may potentially further reduce odors.

The existing storm water retention pond is not covered, so storing storm water in storage tanks that are covered may reduce any odors from fugitive dust compared to when the storm water evaporates from the existing storm water retention pond.

Exide is an industrial facility where heavy-duty diesel equipment (sweepers) and trucks already operate.

Therefore, PAR 1420.1 is not expected to generate significant adverse odor impacts.

### **III. g) and h) Greenhouse Gas Impacts**

Global warming is the observed increase in average temperature of the earth's surface and atmosphere. The primary cause of global warming is an increase of greenhouse gas (GHG) emissions in the atmosphere. The six major types of GHG emissions are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulfur hexafluoride (SF<sub>6</sub>), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs). The GHG emissions absorb longwave radiant energy emitted by the earth, which warms the atmosphere. The GHGs also emit longwave radiation both upward to space and back down toward the surface of the earth. The downward part of this longwave radiation emitted by the atmosphere is known as the "greenhouse effect."

The current scientific consensus is that the majority of the observed warming over the last 50 years can be attributable to increased concentration of GHG emissions in the atmosphere due to human activities. Events and activities, such as the industrial revolution and the increased consumption of fossil fuels (e.g., combustion of gasoline, diesel, coal, etc.), have heavily contributed to the increase in atmospheric levels of GHG emissions. As reported by the California Energy Commission (CEC), California contributes 1.4 percent of the global and 6.2 percent of the national GHG emissions (CEC, 2004). Further, approximately 80 percent of GHG emissions in California are from fossil fuel combustion (e.g., gasoline, diesel, coal, etc.).

GHGs are typically reported as CO<sub>2</sub> equivalent emissions (CO<sub>2</sub>e). CO<sub>2</sub>e is the amount of CO<sub>2</sub> that would have the same global warming potential (relative measure of how much heat a greenhouse gas traps in the atmosphere) as a given mixture and amount of greenhouse gas. CO<sub>2</sub>e is estimated by the summation of mass of each GHG multiplied by its global warming potential (global warming potentials: CO<sub>2</sub> = 1, CH<sub>4</sub> = 21, N<sub>2</sub>O = 310, etc.).<sup>10</sup>

### **Quemetco**

Quemetco is expected not to have any GHG impacts from their enhanced maintenance activities.

### **Exide**

#### **Construction**

Based on the same assumptions made for the criteria pollutant estimates, approximately 800 metric tons of CO<sub>2</sub>e would be generated from all construction activity including: demolition, fill, paving and construction of air handling and air pollution control systems, storm water storage tanks, and construction vehicles. Amortized over 30 years as prescribed by the SCAQMD Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans<sup>11</sup> adopted by the SCAQMD Governing Board in December 2008, approximately 27 metric tons of CO<sub>2</sub>e emissions per year (see Appendix B for calculations) would be generated from construction activities over the life of the project.

#### **Operation**

The operation of the air handling system, new APC, enhanced measures during maintenance activities and housekeeping, installation of vestibules and wheel washer are not expected to

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<sup>10</sup> California Air Resource Board Conversion Table: <http://www.arb.ca.gov/cc/facts/conversiontable.pdf>

<sup>11</sup> SCAQMD Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans, <http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/ghg-significance-thresholds>



generate greenhouse gases as the equipment control emissions with no secondary emissions impacts. The operation of storm water storage tanks in place of the existing storm water retention ponds is not expected to generate any additional greenhouse gases beyond what was generated by the existing ponds. However, the operation of the street sweeper, water tank truck, and worker vehicles equal to 0.57 metric tons of CO<sub>2</sub>e per year.

**Total GHG Emissions**

PAR 1420.1 may result in the generation of 27 amortized metric tons of CO<sub>2</sub>e construction emissions per year and 0.57 metric tons of CO<sub>2</sub>e operational emissions per year. The addition of 0.57 metric tons of CO<sub>2</sub>e emissions is less than the SCAQMD significance threshold of 10,000 metric tons per year for CO<sub>2</sub>e from industrial projects.

Therefore, PAR 1420.1 is not expected to generate GHG emission, either directly or indirectly, that may have a significant impact on the environment no conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHG gases.

**Conclusion**

Based upon these considerations, the proposed project would not generate significant adverse construction or operational air quality impacts and, therefore, no further analysis is required or necessary and no mitigation measures are necessary or required.

**IV. BIOLOGICAL RESOURCES.**

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by §404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### **Significance Criteria**

Impacts on biological resources will be considered significant if any of the following criteria apply:

- The project results in a loss of plant communities or animal habitat considered to be rare, threatened or endangered by federal, state or local agencies.
- The project interferes substantially with the movement of any resident or migratory wildlife species.
- The project adversely affects aquatic communities through construction or operation of the project.

### **Discussion**

**IV. a), b), c), d), e) & f)** In general, the affected facilities and the surrounding industrial areas currently do not support riparian habitat, federally protected wetlands, or migratory corridors because they are long developed and established foundations used for industrial purposes. Additionally, special status plants, animals, or natural communities identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service are not expected to be found in close proximity to the affected facility. Therefore, the proposed project would have no direct or indirect impacts that could adversely affect plant or animal species or the habitats on which they rely in the SCAQMD's jurisdiction.

Compliance with PAR 1420.1 is expected to reduce lead emissions from operations at the affected facility, which would improve, not worsen, present conditions of plant and animal life, since these TAC emissions would be captured destroyed or disposed of properly before they impact plant and animal life. PAR 1420.1 does not require acquisition of additional land or further conversions of riparian habitats or sensitive natural communities where endangered or sensitive species may be found.

The proposed project is not envisioned to conflict with local policies or ordinances protecting biological resources or local, regional, or state conservation plans because it is only expected to affect existing large lead-acid battery recycling facilities located in an industrial area. PAR 1420.1 is designed to lead emissions which would also reduce emissions both inside and outside the boundaries of the affected facilities and, therefore, more closely in line with protecting biological resources. Land use and other planning considerations are determined by local governments and no land use or planning requirements would be altered by the proposed project. Additionally, the proposed project would not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or any other relevant habitat conservation plan, and would not create divisions in any existing communities because all activities associated with complying with PAR 1420.1 would occur at existing established industrial facilities.

The SCAQMD, as the Lead Agency for the proposed project, has found that, when considering the record as a whole, there is no evidence that the proposed project will have potential for any new adverse effects on wildlife resources or the habitat upon which wildlife depends because all activities needed to comply with PAR 1420.1 would take place at long developed and established facilities. Accordingly, based upon the preceding information, the SCAQMD has, on the basis of substantial evidence, rebutted the presumption of adverse effect contained in §753.5 (d), Title 14 of the California Code of Regulations. Further, in accordance with this conclusion, the

SCAQMD believes that this proposed project qualifies for the no effect determination pursuant to Fish and Game Code §711.4 (c).

Based upon these considerations, significant adverse biological resources impacts are not anticipated. Therefore, no further analysis or mitigation measures are required or necessary.

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**V. CULTURAL RESOURCES.**

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource, site, or feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Impacts to cultural resources will be considered significant if:

- The project results in the disturbance of a significant prehistoric or historic archaeological site or a property of historic or cultural significance to a community or ethnic or social group.
- Unique paleontological resources are present that could be disturbed by construction of the proposed project.
- The project would disturb human remains.

**DISCUSSION**

**V. a), b), c), & d)** Any air pollution control equipment and supporting equipment would be placed within the boundary of an existing established large lead-acid battery recycling facility. The existing large lead-acid battery recycling facilities are located in areas zoned as industrial, which have already been greatly disturbed. No construction is expected at Quemetco. Exide may consider a new scrubber or a new wet ESP for the feed dryer stack.

At Exide, the new APC may be installed near Exide’s property boundary. To make space for a new APC, an existing storm water retention pond may need to be removed and replaced with new storm water storage tanks. Since the air pollution control equipment would be built on existing foundations or the pond area (which was disturbed previously to install the existing storm water retention pond), PAR 1420.1 is not expected to require physical changes to the environment that could disturb paleontological or archaeological resources. Therefore, the proposed project has no potential to cause a substantial adverse change to a historical or archaeological resource, directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, or disturb any human remains, including those interred outside formal cemeteries. Finally, because the proposed project would involve construction activities in previously disturbed areas on-site at industrial facilities and are not expected to require substantial earthmoving, it is unlikely that the county coroner or that the Native American Heritage Commission would need to be contacted. The proposed project is, therefore, not anticipated to result in any activities or promote any programs that could have a significant adverse impact on cultural resources in the district.

Based on the above discussion, the proposed project is not expected to create any significant adverse effect to a historical resource as defined in §15064.5; cause a new significance impact to an archaeological resource as defined in §15064.5; directly or indirectly destroy a unique paleontological resource, site, or feature; or disturb any human including those interred outside formal cemeteries.

Based upon these considerations, significant adverse cultural resources impacts are not anticipated. Therefore, no further analysis or mitigation measures are required or necessary.

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**VI. ENERGY.**

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with adopted energy conservation plans?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the need for new or substantially altered power or natural gas utility systems?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Create any significant effects on local or regional energy supplies and on requirements for additional energy?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create any significant effects on peak and base period demands for electricity and other forms of energy?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Comply with existing energy standards?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Impacts to energy and mineral resources will be considered significant if any of the following criteria are met:

- The project conflicts with adopted energy conservation plans or standards.
- The project results in substantial depletion of existing energy resource supplies.
- An increase in demand for utilities impacts the current capacities of the electric and natural gas utilities.
- The project uses non-renewable resources in a wasteful and/or inefficient manner.

**DISCUSSION**

**VI. a) & e)** PAR 1420.1 does not require any action which would result in any conflict with an adopted energy conservation plan or violation of any energy conservation standard. PAR 1420.1 is not expected to conflict with adopted energy conservation plans because existing facilities would be expected to continue implementing any existing energy conservation plans.

PAR 1420.1 is not expected to cause new development. The local jurisdiction or energy utility sets standards (including energy conservation) and zoning guidelines regarding new development and will approve or deny applications for building new equipment at the affected facility. During the local land use permit process, the project proponent may be required by the local jurisdiction or energy utility to undertake a site-specific CEQA analysis to determine the impacts, if any, associated with the siting and construction of new development.

As a result, PAR 1420.1 would not conflict with energy conservation plans, use non-renewable resources in a wasteful manner, or result in the need for new or substantially altered power or natural gas systems.

**VI. b), c) & d.**

**Quemetco**

No energy impacts are expected at Quemetco’s facility.

**Exide**

Exide may increase their electricity consumption associated with the new air monitors, new vestibules/air curtains, modified air handling systems and new APC equipment. Diesel fuel would be consumed by construction equipment. Gasoline fuel would be consumed by the construction workers vehicles and source testing vehicles. The following sections evaluate the various forms of energy sources affected by the proposed project.

The three new air monitors are expected to be electric powered. An air monitor typically requires 16 amps of service (6 amps for the monitor and 10 amps for vacuum pumps), which would be approximately two kilowatts (kW)<sup>12</sup>. The addition of three air monitors would require 6 kW, which is not expected to be significant.

For the building’s total enclosures enhancements, as estimation of 70 hp (total) worth of air curtains and 8 vestibules. They would be in use 10% of the time (when people or vehicles enter/exit). Operating continuously throughout the year, the kW usage would be 65,350 kW annually.

The Wheel washer is electrical. It is estimated to use: 14.4kW \* 0.008 hr/truck \* 100 truck/day = 12 kW/day = 4,380 kW/year.

Exide may need an air pollution control system to comply with PAR 1420.1. The new two-cell WESP would need approximately 10,000 standard cubic feet per minute (scfm) of air flow. The new blower’s electrical usage is estimated to be 1788 kW-hr. The WESP is assumed to use 6,720 kilowatts per hour (kWh). The scrubber would use an estimated 14 kWh. Hence, the worst of the two cases would be the WESP system. (See Table 2-12 for a side by side comparison.)

**Table 2-12 APC Electricity Usage Comparison**

	<b>Two-cell WESP</b>	<b>Scrubber</b>
<b>Electricity requirement</b>	280 kW.	42 kW
<b>Daily electricity use:</b>	6,720 kW-hr (6.7 MW-hr)	1,008 kW-hr (1.0 MW-hr)
<b>Annual electricity use:</b>	2,453 MW-yr	368 MW-yr

The California Energy Commission (CEC) staff reports that Los Angeles Department of Water and Power (LADWP) consumed 25,921 gigawatts (GW) in 2008 with a peak consumption of 5,717 megawatts per hour (MWh) in 2008. The power required to run the WESP system at Exide would be 0.000033 % of the 2008 consumption and 0.2 % of the peak consumption. Therefore, SCAQMD staff concludes that the amount of electricity required to meet the incremental energy demand associated with PAR 1420.1 would be sufficient and would not

<sup>12</sup> Power = (A x V)/1000 = (16 amps x 110 voltage)/1000 =1.76 kW x 24 hr = 42.24 kW-hr per monitor.



result in a significant adverse electricity energy impact. (See Tables 2-13 and Table 2-14 for details.)

**Table 2-13: PAR 1420.1 Additional Electricity Consumption**

Energy	Consumption (kW-h)
WESP	6720
Blower (100 bhp)	1788
Vestibules and Air Curtains (8 sets, running 10%)	7.5
Air Monitors (3 monitors, 24 hrs/day)	127
Wheel Washer	0.5
<b>Total</b>	<b>8,643</b>

**Table 2-14 Electricity Use from PAR 1420.1 Compliance**

Area	Electricity Use, kW/hr	Electricity Use, MW/year	Area Consumption, GW-H	Area Consumption	Area Peak Consumption MW-hr	Area Peak Consumption
LADWP	8,643	75,713	25,921	3.3E-05 %	5,717	0.2 %

It is uncertain whether pumps associated with moving storm water in and out of the storm water storage tanks would be larger than those that currently move storm water in and out of the existing storm water retention pond. At this time, it is assumed that electricity used by the pumps associated with the storm water storage tanks would be similar to the electricity used by the pumps associated with the storm water retention pond, since the amount of stormwater is not expected to change due to the proposed project. Thus, no new electricity demand is anticipated as a result of the replacement of the storm water retention pond with storage tanks.

**Natural Gas Impacts**

No new natural gas impacts are expected.

**Diesel Impacts**

**Construction Diesel Use**

Approximately 152 gallons of diesel fuel on a peak day would be expected to be consumed by construction equipment and delivery trucks. According to the 2012 AQMP, 235 million gallons of diesel is consumed per day in Los Angeles County. Since 152 gallons of diesel per day is far less than one percent (0.00007 percent) of the diesel available, the proposed project is not considered to have a significant adverse diesel fuel use impact from construction.

**Operational Diesel Use**

*Sweeper Diesel Use*

Exide is expected to double their diesel vehicle sweeping. Diesel use was estimated for the three extra sweeping events that would be required at the affected facility that currently only swept three per day. Diesel use was estimated assuming that sweepers would be nine feet wide, sweep over the entire outside area around the production site (i.e., not around administrative buildings)

three times a day with two feet of overlap on the return path as the sweepers travel back and forth. Assuming a ten mile per gallon of diesel fuel efficiency approximately 2.1 gallons of diesel would be consumed on a peak day.

Since the additional sweeping is only expected to require 65 gallons more fuel per year, no additional diesel fuel delivery is expected, so there would be no additional diesel fuel use from diesel fuel delivery.

## Gasoline Usage

### Construction Gasoline Use

Ten construction worker trips are expected on a peak day on a given day. Based on a 20 mile round trip, and a 10 mile per gallon fuel efficiency, approximately 40 gallons of gasoline would be used on a peak day. The 2012 AQMP states that 235 million gallons of gasoline are consumed per day in Los Angeles County. An additional 40 gallons of gasoline consumed on a peak day (0.00002 percent of the daily consumption) is not expected to have a significant adverse impact on gasoline supplies.

### Operational Gasoline Use

Additional worker trips may be associated with additional enhanced maintenance activities and housekeeping provisions. The proposed project is not expected to change the number of source testing days. Additional source testing would require an additional gasoline-fueled vehicle trip to the facility on the day of sources testing. It was assumed that 32 workers would be required to do the enhanced housekeeping measures (32 additional gasoline-fueled vehicle trips).

**Table 2-15 Worker Gasoline Usage**

<b>Vehicle</b>	<b>No. of One-Way, Trips/Day</b>	<b>One-Way Trip Length, miles</b>	<b>Fuel Economy, mpg</b>	<b>Fuel Used, gal/day</b>
Automobile	32	20	10	128

Based on a 20 mile round trip, and a 10 mile per gallon fuel efficiency, approximately 128 gallons of gasoline would be used by the additional workers' vehicle trips (see Table 2-15 for details). The 2012 AQMP states that 235 million gallons of gasoline are consumed per day in Los Angeles County. An additional 128 gallons of gasoline (32 worker trips) consumed on a peak day (0.00005 percent of the daily consumption) is not expected to have a significant adverse impact on gasoline supplies during operation.

Based upon these considerations, significant adverse energy impacts are not anticipated. Therefore, no further analysis or mitigation measures are required or necessary.

**VII. GEOLOGY AND SOILS.**

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Impacts on the geological environment will be considered significant if any of the following criteria apply:

- Topographic alterations would result in significant changes, disruptions, displacement, excavation, compaction or over covering of large amounts of soil.
- Unique geological resources (paleontological resources or unique outcrops) are present that could be disturbed by the construction of the proposed project.

- Exposure of people or structures to major geologic hazards such as earthquake surface rupture, ground shaking, liquefaction or landslides.
- Secondary seismic effects could occur which could damage facility structures, e.g., liquefaction.
- Other geological hazards exist which could adversely affect the facility, e.g., landslides, mudslides.

## DISCUSSION

**VII. a)** No construction is expected at Quemetco. Exide may consider the construction of a new APC and its auxiliary equipment that could potentially disturb soils.

Exide may choose to install a new scrubber or install a wet ESP to control lead emissions.

To make space for a new control device, the existing storm water retention pond may need to be removed and then replaced with storm water storage tanks, which would also be installed within the affected facility. Therefore, all construction activities would occur on-site at these existing facilities. Changes to operations would include operation and maintenance of the new control technology and support equipment as well as the operation and maintenance of the storm water storage tanks if they are installed.

Because Southern California is an area of known seismic activity, existing facilities are expected to conform to the Uniform Building Code and all other applicable state and local building codes. As part of the issuance of building permits, local jurisdictions are responsible for assuring that the Uniform Building Code is adhered to and can conduct inspections to ensure compliance. The Uniform Building Code is considered to be a standard safeguard against major structural failures and loss of life. The basic formulas used for the Uniform Building Code seismic design require determination of the seismic zone and site coefficient, which represents the foundation condition at the site.

Exide has a small portion of the facility that is located in an area where there has been historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicated a potential for permanent groundwater displacements in the event of an earthquake.<sup>13</sup> The liquefaction zone bisects the property from the most western end of the property by the Union Pacific and Santa Fe Road to the north down to the southwest corner of the storm water retention pond, which may need to be replaced with storm water storage tanks to provide space for air pollution equipment. The Uniform Building Code requirements also consider liquefaction potential and establish stringent requirements for building foundations in areas potentially subject to liquefaction. PAR 1420.1 does not require a specific means of control technology or specify placement of the control technology; however, due to the special needs of the wet ESP, it is anticipated that the pond area would be most reasonable. The owners/operators of the affected facility that may need air pollution control equipment to comply with PAR 1420.1 would need to follow the Uniform Building Code requirements about building structures in areas potentially subject to liquefaction, if any air pollution control equipment or replacement equipment such as storage tanks is placed over the areas identified as subject to liquefaction. The liquefaction conditions, however, is an existing condition and there has not been a historical

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<sup>13</sup> The Exide Corporation Hazard Waste Facility Permit Draft Environmental Impact Report, SCH No. 93051013  
June 2006

problem at the existing facility. In addition, changes due to PAR 1420.1 will not directly cause or worsen the existing liquefaction possibility.

Since all structures and control technology would be built according to the Uniform Building Code, the proposed project would not expose people or structures to risks of loss, injury, or death involving: rupture of an earthquake fault, seismic ground shaking, ground failure or landslides. Since the affected facility already exists, PAR 1420.1 is not expected to increase exposure to existing earthquake risk.

**VII. b)** Construction related to PAR 1420.1 may require earthmoving to prepare foundations for a scrubber or wet ESP. PAR 1420.1 requires the encapsulation of all facility grounds to prevent lead contamination (i.e., paving or asphaltting of all surfaces). Therefore, all disturbed surfaces are expected to be re-compacted and re-paved after construction is finished. All construction is expected to follow the Uniform Building Code. Therefore, no significant soil erosion or significant loss of topsoil, significant unstable earth conditions or significant changes in geologic substructures are expected to occur at the affected facility as a result of implementing the proposed project.

**VII. c)** Since the proposed project would affect an existing facility whose soil has already been disturbed, it is expected that the soil types present at the affected facility would not be further susceptible to expansion or liquefaction other than is already existing. Furthermore, subsidence and liquefaction is not anticipated to be a problem since any excavation, grading, or filling activities are expected to follow the Uniform Building Code. Additionally, the affected areas are not envisioned to be prone to landslides, instability, or have unique geologic features since the affected existing facility is located in industrial areas in a flat area.

**VII. d) & e)** Since PAR 1420.1 would affect soils at an existing established facility located in a highly developed industrial zone, it is expected that people or property would not be exposed to expansive soils or soils incapable of supporting water disposal. The affected facility has an existing wastewater treatment system that would continue to be used, and these systems are expected to have the capacity to support this proposed project. Sewer systems are available to handle wastewater produced and treated by the affected facility. Therefore, PAR 1420.1 would not require the installation of new septic tanks or alternative wastewater disposal systems at the affected facility. As a result, PAR 1420.1 would not require operators to utilize septic systems or alternative wastewater disposal systems. Thus, the proposed project would not adversely affect soils normally associated with a septic system or alternative wastewater disposal system.

Based upon these considerations, significant adverse geology and soil impacts are not anticipated. Therefore, no further analysis or mitigation measures are required or necessary.

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**VIII. HAZARDS AND HAZARDOUS MATERIALS.**

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, and disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions, or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport or a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Significantly increased fire hazard in areas with flammable materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### **Significance Criteria**

Impacts associated with hazards will be considered significant if any of the following occur:

- Non-compliance with any applicable design code or regulation.
- Non-conformance to National Fire Protection Association standards.
- Non-conformance to regulations or generally accepted industry practices related to operating policy and procedures concerning the design, construction, security, leak detection, spill containment or fire protection.
- Exposure to hazardous chemicals in concentrations equal to or greater than the Emergency Response Planning Guideline (ERPG) 2 levels.

### **DISCUSSION**

**VIII. a) & b)** PAR 1420.1 may increase the amount of lead captured. However, the facilities plan on utilizing the captured lead in their slurry. The additional captured lead emissions through additional housekeeping, air pollution control, building improvement would reduce the lead that is currently emitted into the air. Thus, the capture of these lead emissions would reduce lead exposure to the public and the environment.

Increased maintenance of baghouses will ensure that they operate properly and decrease the likelihood of tears or holes forming which would require replacement. Therefore, no increased disposal of baghouse filters is expected.

Spent lead is already transported for treatment offsite and out of the Basin. The additional lead captured by new air pollution control systems would be returned to the recycling process, which is the same process as the lead captured by the existing scrubber system. So no new significant hazards are expected to the public or environment through its routine transport, use and disposal.

The additional lead that may be controlled by a new air pollution control system would be captured in water cycled through the system. Lead in water is not considered volatile. All wastewater systems would require secondary containment in the case of an upset to prevent the release of the lead containing water. Therefore, a replacement scrubber or new wet ESP system is not expected to create a significant hazard to the public or environment through reasonably foreseeable upset conditions involving the release of hazardous materials into the environment

Therefore, PAR 1420.1 is not expected to create a significant hazard to the public or environment through reasonably foreseeable upset conditions involving the release of hazardous materials into the environment.

**VIII. c)** No schools are located within a quarter mile of Quemetco and Exide. Therefore, PAR 1420.1 would not result in hazardous emissions, handling of hazardous or acutely hazardous materials, substances or wastes within one-quarter mile of an existing or proposed school.

**VIII. d)** Government Code §65962.5 refers to hazardous waste handling practices at facilities subject to the Resources Conservation and Recovery Act (RCRA). Both PAR 1420.1 affected facilities are on the Cortese List as presented in the ENVIROSTOR<sup>14</sup> database.

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<sup>14</sup> <http://www.envirostor.dtsc.ca.gov>

### **Quemetco**

Since no construction is expected at Quemetco, no additional hazards from soil disturbances are expected.

### **Exide**

Exide may need to construct a new APC device to comply with PAR 1420.1. During the demolition and excavation phase, it is possible that the concrete and soil to be removed to lay the new foundations may also be contaminated. Exide currently has a legal obligation to follow proper procedures to handle and dispose their hazardous wastes. See their 2014 SCAQMD Mitigation Monitoring Plan<sup>15</sup> for more details.

In addition, hazardous waste is expected to be disposed properly offsite so the proposed project would not increase a hazard at the affected site or the public and environment offsite. Hazardous wastes from Exide are required to be managed in accordance with applicable federal, state, and local rules and regulations. Accordingly, significant hazards impacts from the disposal/recycling of hazardous materials are not expected from the implementation of PAR 1420.1.

**VIII. e)** Exide is not near any airports or private airstrips. Quemetco is within six miles of the El Monte Airport. PAR 1420.1 would result in the reduction of lead emissions. Secondary TAC emissions from the proposed project were addressed in the Air Quality section of this Draft SEA and found to be less than significant. Therefore, no new hazards are expected to be introduced at the affected facility that could create safety hazards at local airports or private airstrips. Therefore, PAR 1420.1 is not expected to result in a safety hazard for people residing or working in the project area even within the vicinity of an airport.

**VIII. f)** Emergency response plans are typically prepared in coordination with the local city or county emergency plans to ensure the safety of the public (surrounding local communities), and the facility employees as well. The proposed project would not impair implementation of, or physically interfere with any adopted emergency response plan or emergency evacuation plan. The existing affected facility already has an emergency response plan in place. The addition of air pollution control equipment and possible replacement of the storm water retention pond with storage tanks is not expected to require modification of the existing emergency response plan at the affected facility. Thus, PAR 1420.1 is not expected to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

**VIII. g)** The proposed project affects facilities located in highly developed areas and are not adjacent to wildland, so potential for a wildland fire from the proposed project does not exist.

**VIII. h)** The Uniform Fire Code and Uniform Building Code set standards intended to minimize risks from flammable or otherwise hazardous materials. Local jurisdictions are required to adopt the uniform codes or comparable regulations. Local fire agencies require permits for the use or storage of hazardous materials and permit modifications for proposed increases in their use. Permit conditions depend on the type and quantity of the hazardous materials at the facility. Permit conditions may include, but are not limited to, specifications for sprinkler systems, electrical systems, ventilation, and containment. The fire departments make annual business

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<sup>15</sup> [http://www.aqmd.gov/docs/default-source/ceqa/documents/permit-projects/2014/exide-mmp\\_final.pdf?sfvrsn=2](http://www.aqmd.gov/docs/default-source/ceqa/documents/permit-projects/2014/exide-mmp_final.pdf?sfvrsn=2)



inspections to ensure compliance with permit conditions and other appropriate regulations. Further, businesses are required to report increases in the storage or use of flammable and otherwise hazardous materials to local fire departments. Local fire departments ensure that adequate permit conditions are in place to protect against potential risk of upset. The proposed project would not change the existing requirements and permit conditions.

The modifications to existing ducting, installation of new scrubber or new wet ESP at Exide would not involve increased fire risk because it would not involve flammable materials. The water in the new scrubber or wet ESP reduces the risk of fire from furnace emissions.

The proposed project would also not increase the existing risk of fire hazards in areas with flammable brush, grass, or trees. No substantial or native vegetation typically exists on or near the affected facilities (specifically because such areas could allow the accumulation of fugitive lead dust), the existing rule requires the encapsulating (paving or asphaltting) of all facility grounds. So the proposed project is not expected to expose people or structures to wild fires. Therefore, no significant increase in fire hazards is expected at the affected facilities associated with the proposed project.

Based upon these considerations, significant adverse hazards and hazardous materials impacts are not anticipated. Therefore, no further analysis or mitigation measures are required or necessary.

**IX. HYDROLOGY AND WATER QUALITY.**

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards, waste discharge requirements, exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board, or otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion or siltation on- or off-site or flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Place housing or other structures within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project: as a result of the failure of a levee or dam, or inundation by seiche, tsunami, or mudflow?				
g) Require or result in the construction of new water or wastewater treatment facilities or new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Significance Criteria**

Potential impacts on water resources will be considered significant if any of the following criteria apply:

Water Demand:

- The existing water supply does not have the capacity to meet the increased demands of the project, or the project would use more than 262,820 gallons per day of potable water.
- The project increases demand for total water by more than five million gallons per day.

Water Quality:

- The project will cause degradation or depletion of ground water resources substantially affecting current or future uses.
- The project will cause the degradation of surface water substantially affecting current or future uses.
- The project will result in a violation of National Pollutant Discharge Elimination System (NPDES) permit requirements.
- The capacities of existing or proposed wastewater treatment facilities and the sanitary sewer system are not sufficient to meet the needs of the project.
- The project results in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.
- The project results in alterations to the course or flow of floodwaters.

## DISCUSSION

The two existing affected facilities have on-site wastewater treatment operations. The wastewater treatment systems are comprised of settling and equalization tanks. Lead collected in the wastewater treatment systems is re-used in their lead recycling operations (also known as slurry). The wastewater systems at both facilities treat process water and storm water before it is discharged to the publicly owned treatment works (POTWs). The discharged water must comply with existing lead water quality standards.

No construction is expected at Quemetco. However, there are water impacts from additional maintenance activities, housekeeping measures, wheel washing, and operation of a new APC. The following sections discuss the water impacts in detail.

**IX. a)** PAR 1420.1 would not alter any existing wastewater treatment requirements of the Los Angeles County Sanitation District (LACSD) and Regional Water Quality Control Board or otherwise substantially degrade water quality that the requirements are meant to protect. Although the amount of water used by Exide for the new APC equipment may increase and the storm water may need to be stored in storage tanks, all of the storm water and wastewater from the facility would still be required to be treated by the onsite wastewater treatment.

Wastewater from a new APC device would be kept within an enclosed system and treated in the on-site wastewater treatment system. The additional lead captured by the new APC device would be removed from the resultant wastewater and reused in their operations.

Currently, storm water is held in a storm water retention pond. If Exide chooses to install a WESP, the storm water pond would need to be removed in order to make sufficient space for the WESP (there is sufficient space for a scrubber within their building). The pond would be replaced with new storm water storage tanks. No change in the amount of storm water or concentration of pollutants is expected from storing storm water in storage tanks. Pollutants are removed from the storm water by the existing on-site wastewater treatment system.

Discharge concentrations are currently and would continue to be limited by the Industrial Wastewater Discharge Permit.<sup>16</sup> Exide's Hazardous Waste Facility Permit states that any wastewater that does not meet the discharge concentrations set by the LACSD would have to be cycled through the treatment plant until the discharge criteria is met or discharged as hazardous waste.<sup>17</sup> Since wastewater from the facility is treated in an on-site wastewater treatment facility, heavily regulated, and enforced, no change in the water quality of the discharge is expected.

**IX. b)** PAR 1420.1 would not require the use of groundwater. The facilities use potable water that is treated in their respective on-site wastewater treatment, reused, and then directed to the sanitary sewer. Therefore, it would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge.

**IX. c) & d)** At Quemetco, no physical changes are expected to alter the existing drainage pattern, storm water collection or wastewater treatment of their facility.

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<sup>16</sup> According to Los Angeles County Sanitation District- (June 28, 2013).

<sup>17</sup> Exide Technologies, Hazardous Waste Facility Permit, Attachment "A", 2006, [www.dtsc.ca.gov/HazardousWaste/Projects/upload/Exide\\_dPermit.pdf](http://www.dtsc.ca.gov/HazardousWaste/Projects/upload/Exide_dPermit.pdf)

Exide may replace their storm water pond with new storage tanks to provide room for a new APC. The new storage tanks would be designed to collect the storm water that is currently directed to the retention pond. Since the amount of storm water would not change and the existing system already directs the storm water to a single location at the facility (i.e., retention pond), which would now be redirect to storage tanks, the proposed project is not expected to have significant adverse effects on any existing drainage patterns, or increase the rate or amount of surface runoff water that would exceed the capacity of existing or planned storm water drainage systems at Exide.

Therefore, PAR 1420.1 is a project that is not expected to have significant adverse effects on any existing drainage patterns, or cause an increase rate or amount of surface runoff water that would exceed the capacity of the facilities' existing or planned storm water drainage systems.

**IX. e) & f)** PAR 1420.1 does not include or require any new or additional construction activities to build additional housing that could be located in 100-year flood hazard areas. Similarly, the sources affected by the proposed project are located at existing commercial or industrial facilities. Hence, PAR 1420.1 is not expected to result in placing housing in 100-year flood hazard areas that could create new flood hazards. Therefore, PAR 1420.1 is not expected to generate significance impacts regarding placing housing in a 100-year flood zone.

For the same reasons as those identified in the preceding paragraph, PAR 1420.1 is not expected to create significant adverse risk impacts from flooding as a result of failure of a levee or dam or inundation by seiches, tsunamis, or mudflows because the proposed project does not require levee or dam construction, and the affected facilities are located on flat land far from the ocean.

**IX. g)** The proposed project is not expected to generate significant water use or wastewater generation (see IX. h). The battery recycling activity is not expected to change from current operating levels. PAR 1420.1 will not significantly affect the facilities' water and wastewater generation. Therefore, no additional water or waste water treatment facilities are expected nor any planned expansion of the facilities' existing on-site wastewater treatment system.

### **Exide**

Construction related to the replacement of the storm water retention pond with storage tanks may occur to provide space for the new WESP, but that would occur as a result of complying with the lead emission reduction. Exide is able to use their recycled water for the APC and is capable of handling the new wastewater generation. Therefore, there would not be any need for a new water or wastewater treatment facility.

Based on the analysis in this environmental checklist, PAR 1420.1 is not expected to result in the construction of new water or waste water treatment facilities, new storm water drainage facilities, expansion of existing facilities, or construction of which could cause significant environmental effects. Therefore, no further analysis or mitigation measures are required or necessary.

**IX. h)**

**Construction Impacts**

**Quemetco**

No construction would be required at Quemetco.

**Exide**

Water is expected to be used for dust suppression during construction of the WESP and the removal of the storm water retention pond. The disturbed area is expected to be approximately one acre in size. One acre is 43,560 square feet. Assuming one gallon per square foot and watering three times daily, approximately 130,681 gallons of water per day would be used. The use of 130,681 gallons of water per day is less than the SCAQMD's significance threshold of 262,820 gallons per day of potable water and total water demand of more than five million gallons per day. Thus, sufficient water supplies are expected to be available to serve the project from existing entitlements and resources without the need for new or expanded entitlements. Therefore, PAR 1420.1 is not expected to be significant for water demand during construction.

**Operational Impacts**

Quemetco and Exide will need a maintenance team to minimize their fugitive dust from quarterly maintenance activities, such as concrete/asphalt cutting, drilling, or soil grading. The maintenance team will use water hoses to water down the dust from these activities. Staff estimates these quarterly activities will result in 200 gal/day for both facilities.

**Exide**

Exide may need to install a new wet scrubber or a new WESP to comply with PAR 1420.1 ambient concentration limits. The scrubber would have an influent and effluent flow rate of 25 to 30 gallons per minute (gpm), which equals to 43,200 gallons of water per day (gal/day). For a new WESP system, its water demand would use 2.9 gpm (70.1 gal/day). However, the worst case would be 43,200 gal/day of additional water from the scrubber.

Exide is also expected to use additional water for the wheel washer station and housekeeping related activities. The wheel washer is expected to would use 24 gallons of water per vehicle and a maximum of 100 vehicles per day. The total daily water consumption from the wheel washer station would be 2,400 gal/day. Currently, Exide fills their one water tank truck approximately 15 times per day, which has a capacity of 3,000 gallons. This equates to 45,000 gal/day of water per day during housekeeping operations<sup>18</sup>. Staff estimates that the housekeeping water usages for PAR 1420.1 compliance will double; therefore the increase would be by an additional 45,000 gal/day (total consumption 90,000 gal/day).

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<sup>18</sup> Housekeeping operations include street sweeping, watering, and washing the facility.

**Table 2-16: PAR 1420.1 Additional Water Consumption**

<b>Water Application</b>	<b>Additional Water Usage (gal/day)</b>
<b>Enhanced Maintenance Activities</b>	200
<b>New Wet Scrubber</b>	43,200
<b>Wheel Washer Station</b>	2,400
<b>Enhanced Housekeeping Measures</b>	45,000
<b>Total</b>	<b>90,800</b>
<b>Significance Threshold</b>	262,820
<b>Exceed Significance Threshold?</b>	<b>No</b>

Therefore, the total additional use would be 90,800 gal/day of water, which is less than the significance threshold of 262,820 gal/day of potable water and total water demand of more than five million gallons per day (see Table 2-16: PAR 1420.1 Additional Water ). Therefore, sufficient water supplies are expected to be available to serve the project from existing entitlements and resources without the need for new or expanded entitlements. Therefore, PAR 1420.1 is not expected to be significant for operational water demand.

Please note that the water used during the construction phase of the project and operational phase of the project are not additive as these activities are taking place at different times and do not overlap. Thus, the impacts to water are based on a worst case daily water demand from either the construction or the operational phases of the project.

**IX. i)** Staff estimates the additional water usage from the affected facilities' quarterly maintenance activities are expected to be 800 gal/year (200 gal x 4 activities). Both facilities are capable of handling the waste water from these activities. See below for a thorough discussion.

**Quemetco**

No significant impacts are expected for Quemetco's sewer system.

Permitted and actual wastewater use was provided by the telephone conversation with the Los Angeles Sanitation District on January 3, 2014. The average daily wastewater discharge rate allowed by Quemetco's Industrial Wastewater Discharge Permit is 283,000 gal/day. The peak wastewater discharge rate allowed by Quemetco's Industrial Wastewater Discharge Permit is 320 gpm. Between 2011 and 2013, Quemetco has reported their daily average wastewater discharge rates to be between 222,928 gal/day and 264,093 gal/day, respectively. Their reported peak wastewater discharge rates have been between 250 gpm and 318 gpm during 2011 and 2013, respectively.

Quemetco is expected to use an additional 400 gal/yr of water for their quarterly maintenance activities. Their maintenance team will use a water hose to dampen the dust from cuttings/drillings, washing, or soil grading. These types of activities occur once a day per quarter. Staff estimates a maximum water rate from a standard water hose would be 2.5 gpm. The water from these maintenance activities would flow to their drainage system to be collected, and then treated in their wastewater treatment system. As a result, their peak wastewater discharge rate

would increase, with a total rate of 320.5 gpm (318 gpm+ 2.5 gpm), which is slightly greater than their 320 gpm peak wastewater discharge limit. According to the LACSD, a facility is allowed to discharge up to 25 % over their permitted limit before a change is required to their permit, which would be 400 gpm. Since the peak wastewater discharge rate of 320.5 gpm is less than 400 gpm, the peak wastewater discharge rate is not considered significant.

Their daily average wastewater discharge rate is estimated to increase to 264,193 gal/day (100 gal/day + 264,093 gal/day), which is less than their daily average wastewater discharge limit allowed by Quemetco's Industrial Wastewater Discharge Permit of 283,000 gallons per day. Since the additional volume of water generated by maintenance activities is within the permitted limits of Quemetco's Industrial Wastewater Discharge Permit, PAR 1420.1 is not expected to adversely affect Quemetco's wastewater discharge. Since the permit wastewater discharge rates are in volume per minute and volume per day. The additional sump clean out would result in the same impacts on one additional day per year.

### **Exide**

No significant impacts are expected for Exide's sewer system.

Exide may need to install a new wet scrubber or a new WESP to comply with PAR 1420.1. The scrubber would have an influent and effluent flow rate of 25 to 30 gallons per minute (gpm), which equals to 43,200 gallons of water per day (gal/day). For a new WESP system, as estimated water use would be 2.9 gpm (70.1 gal/day). For the worst case scenario, the scrubber would use the most water and the wastewater discharge rate would be 43,200 gal/day.

Exide has an Industrial Wastewater Discharge Permit with a maximum 310,000 gal/day limit. The daily wastewater peak discharge rate for the fiscal year 2011/2012 was 132,630 gal/day based on the annual surcharge statement submitted by the company. Their permitted maximum peak discharge limit is 300 gpm. They had a peak discharge rate<sup>19</sup> of 236 gpm.

An increase of 30 gpm of discharged wastewater would increase their total peak discharge rate to 266 gpm of wastewater (30 gpm + 236 gpm), which would be less than the maximum permitted wastewater discharge rate of 300 gpm for the existing wastewater system. The additional 43,200 gal/day of discharged wastewater would result in an average facility wastewater discharge rate of 175,830 gal/day, which would be less than the permit maximum wastewater discharge rate of 310,000 gal/day, so no change to current permit is required.

If the proposed project does trigger a wastewater discharge rate that exceeds the 310,000 gal/day limit, the LACSD deems that a secondary peak permit could be required to allow the discharge during non-peak hours. Significance thresholds for industrial wastewater discharge is determined by its impact to the affected sewer system. The LACSD provided that there is not any hydraulic overloading of the sewer system downstream of the Exide. However, wastewater flow can also affect relief or repair work, but no relief or repair work in the near future was identified by the LACSD. Based on the existing sewer system used by Exide, the LACSD believes that an additional 30 gpm can be accommodated by the existing sewer system.

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<sup>19</sup> A peak discharge rate is based on the average of the ten highest 30-minute peak flow periods.



Therefore, based on the above analysis, there would be adequate capacity to serve the proposed project's projected demand addition to the provider's existing commitments.

Based upon these considerations, significant adverse hydrology and water quality impacts are not anticipated and, therefore, no further analysis is required or necessary.

**X. LAND USE AND PLANNING.**

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Land use and planning impacts will be considered significant if the project conflicts with the land use and zoning designations established by local jurisdictions.

**DISCUSSION**

**X. a)** No construction and no operation changes are expected at Quemetco. Because of PAR 1420.1, Exide may consider the construction of a new APC device and its auxiliary equipment. All construction activities would occur on-site. To make space for a new air pollution control, an existing storm water retention pond may need to be removed and replaced with new storm water storage tanks, which would also be installed within the boundaries of the affected facility. Any changes to Exide’s operations would also occur on-site. Therefore, the proposed project would not create divisions in any existing communities.

**X. b)** Land use and other planning considerations are determined by local governments. Construction and operation of a new air pollution control device would occur within the boundaries of an existing large lead recycling facility, which is in an area that is zoned for industrial use. The new PAR 1420.1 requirements are not designed to impede or conflict with existing land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect, but to assist in avoiding or mitigating lead emissions impacts from large lead recycling facilities. Operations at both affected facilities would still be expected to comply, and not interfere, with any applicable land use plans, zoning ordinances.

Based upon these considerations, significant adverse land use and planning impacts are not anticipated. Therefore, no further analysis or mitigation measures are required or necessary.

**XI. MINERAL RESOURCES.**

	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Project-related impacts on mineral resources will be considered significant if any of the following conditions are met:

- The project would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- The proposed project results in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

**DISCUSSION**

**XI. a) & b)** There are no provisions in PAR 1420.1 that would result in the loss of availability of a known mineral resource of value to the region and the residents of the state such as aggregate, coal, clay, shale, et cetera, or of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. Exide’s new APC equipment and new storm water storage tanks would not remove any mineral resources of value to the region and the residents of the state.

Based upon these considerations, significant adverse mineral resources are not anticipated. Therefore, no further analysis or mitigation measures are required or necessary.

**XII. NOISE.**

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project result in:				
a) Exposure of persons to or generation of permanent noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport or private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Impacts on noise will be considered significant if:

- Construction noise levels exceed the local noise ordinances or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three decibels (dBA) at the site boundary. Construction noise levels will be considered significant if they exceed federal Occupational Safety and Health Administration (OSHA) noise standards for workers.
- The proposed project operational noise levels exceed any of the local noise ordinances at the site boundary or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three dBA at the site boundary.

**Discussion**

**XI. a) & c)** Noise is usually defined as sound that is undesirable because it interferes with speech communication and hearing, is intense enough to damage hearing, or is otherwise annoying (unwanted noise). Sound levels are measured on a logarithmic scale in decibels (dB). The universal measure for environmental sound is the "A" weighted sound level (dBA), which is the sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. "A" scale weighting is a set of mathematical factors applied by the measuring instrument to shape the frequency content of the sound in a manner similar to the way the human ear responds to sounds.

Federal, state and local agencies regulate environmental and occupational, as well as, other aspects of noise. Federal and state agencies generally set noise standards for mobile sources, while regulation of stationary sources is left to local agencies. Local regulation of noise involves implementation of General Plan policies and Noise Ordinance standards, which are general principles, intended to guide and influence development plans. Noise Ordinances set forth specific standards and procedures for addressing particular noise sources and activities. The Occupational Safety and Health Administration (OSHA) sets and enforces noise standards for worker safety.

**Exide**

Existing operational noise generated from lead acid battery recycling in the City of Vernon would be subject to the City of Vernon Noise Element of the General Plan and/or the City of Vernon Municipal Code. Table 2-17 City of Vernon Noise Requirements summarizes these requirements.

**Table 2-17 City of Vernon Noise Requirements**

<b>Requirement</b>	<b>Construction Limit (dBA)</b>
Noise Element of the General Plan of the City of Vernon	60-70 dBA CNEL or less - considered "normally compatible" for residential land use.  70-80 dBA CNEL - considered "normally compatible" for industrial use".
City of Vernon Municipal Code Chapter 26, §26.4.1-6	Requires that noise levels generated by construction equipment within a residential zone not exceed 75 dBA.

The proposed project affects an existing facility in the City of Vernon and actions taken to comply with PAR 1420.1 would not generate excessive noise levels outside the boundaries of the affected facility, or expose people residing or working in the project area to excessive noise levels. The proposed project requires no additional process equipment to the existing facilities that would cause noise level to exceed ambient levels. Air pollution control equipment, such as, a scrubber or a WESP, as well as, wastewater storage tanks are not typically noise generating equipment.

**Construction-Related Noise**

Table 2-18 presents construction noise levels from typical construction equipment. The affected facility operations currently include diesel truck traffic to deliver recycled batteries and ship recycled lead product. Based on Table 2-18, paver noise levels are around 85 dBA at 50 feet. Construction would increase the noise levels to around 85 dBA at 50 feet from the center of construction activity. The facility may need to install air pollution control equipment and the closest residences are about 1,400 meters north of the facility. Using the standard of an estimated six dBA reduction for every doubling in distance, the noise levels at the closest residence would be indistinguishable from background. At a distance of 1,400 meters (4,593 feet), the noise impacts are negligible. For example, at the highest level in Table 2-18 (85 dBA), the sound would be reduced to below the municipal code of (75 dBA) at 200 feet away and General Plan level (70 dBA) at 400 feet away. In general, given ambient noise levels near the affected facility, noise attenuation (the lowering of noise levels over distances), and compliance

with local noise ordinances, potential construction noise impacts are not expected to be significant.

**Table 2-18 Construction Noise Sources**

<b>Equipment</b>	<b>Typical Range (decibel)</b>	<b>Analysis Value (decibel)</b>
Cranes	75-89	83
Front Loader	73-86	82
Generator Sets	71-83	81
Pavers	85-88	85
Scraper, Graders	80-93	80
Truck	82-92	82

Typical ranges are from the City of Los Angeles, 1998. Levels are in dBA at 50-foot reference distance. Analysis values are intended to reflect noise levels from equipment in good condition, which appropriate mufflers, air intake silencers, etc. In addition, these values assume averaging of sound level over all directions from the listed piece of equipment.

**Operational Noise**

Noise is a by-product of the existing lead-acid battery recycling operations. Employees and equipment at the existing affected facility currently perform activities which create noise, such as, raw material processing (battery breaking/crushing, charger preparation, rotary drying, sweating), smelting (furnaces), refining and casting, and truck loading/unloading. Control technology, such as, scrubbers or WESPs are not expected to generate noise greater than the existing lead-acid battery recycling operations. Noise ordinances and noise general plan requirements typically govern activities at existing facilities. Contributors to ambient noise levels at typical facilities include onsite equipment and mobile sources. Also, local noise levels are usually governed by noise elements within a local jurisdiction's General Plan, and/or local noise ordinances. Because of the attenuation rate of noise based on distance from the source, it is unlikely that noise levels exceeding local noise ordinances would occur beyond a facility's boundaries. The existing wet ESP at one PAR 1420.1 affected facility cannot be heard offsite over the existing noise generated, so a new wet ESP at the other PAR 1420.1 affected facility is not expected to generate noise above existing background noise as well. The same goes for an installation of a scrubber. Exide already has an operating scrubber and cannot be over heard above their existing background noise. Therefore, PAR 1420.1 is not expected to generate new significant adverse operational noise.

**XI. b)**

**Construction-Related Vibration**

The Federal Transit Administration (FTA) has published standard vibration levels and peak particle velocities for construction equipment operations (FTA, 2006). The approximate velocity level and peak particle velocities for large construction equipment are listed in Table 2-9. Groundborne vibration is quantified in terms of decibels, since that scale compresses the range of numbers required to describe the oscillations. The FTA uses vibration decibels (abbreviated as VdB) to measure and assess vibration amplitude. Vibration is referenced to one micro-inch/sec (converted to 25.4 micro-mm/sec in the metric system) and presented in units of VdB. Based on the activities and equipment which would be used during control technology construction phases,

the construction equipment source levels are estimated to range between 58 VdB and 100 VdB at a distance of 25 feet. When analyzing ground-borne vibration, the FTA recommends using an estimated six VdB reduction for every doubling of distance.<sup>20</sup> Using the FTA methodology, the groundborne vibration levels at the closest worker receptor (300 meters or 984 feet) would be negligible (see Table 2-19). The predicted vibration during construction activities can be compared to the FTA ground-borne vibration impact level of 72 VdB for residences and buildings where people normally sleep. Levels of vibration below the FTA ground-borne vibration impact level are considered less than significant by the FTA. Therefore, because the vibration from construction activities affecting workers and residences is less than the FTA vibration impact level, no significant vibration impacts are expected during the construction period.

**Table 2-19 Construction Vibration Sources**

<b>Equipment</b>	<b>Approximate Peak Particle Velocity at 25 Feet (inch/second)</b>	<b>Approximate Velocity Level at 25 Feet (VdB)</b>
Bulldozer, Large	0.089	87
Bulldozer, Small	0.003	58
Jackhammer	0.035	79
Loaded Truck	0.076	86

Typical ranges are from the City of Los Angeles, 1998. Levels are in dBA at 50-foot reference distance. Analysis values are intended to reflect noise levels from equipment in good condition, which appropriate mufflers, air intake silencers, etc. In addition, these values assume averaging of sound level over all directions from the listed piece of equipment.

**Operational Vibration**

Vibration is also a by-product of the existing lead-acid battery recycling operations. Employees and equipment at the existing affected facility currently perform activities which create vibration, such as, raw material processing (battery breaking/crushing, charger preparation, rotary drying, sweating), smelting (furnaces), refining and casting, and truck loading/unloading. Control technology, such as, scrubbers or WESPs; however, are not expected to generate vibration, as equipment is secured and bolted to the foundation. Therefore, the PAR 1420.1 is not expected to generate new significant adverse operational vibration.

**XI. d)** The affected facility is not near any airports or private airstrips. The closest airport or airstrip is the Hawthorne Municipal Airport, which is 9.6 miles from the affected facility. Therefore, the proposed project would not expose people residing or working in the project area to excessive noise levels within two miles of a public use airport or private airstrip.

Based upon these considerations, significant adverse noise impacts are not anticipated. Therefore, no further analysis or mitigation measures are required or necessary.

<sup>20</sup> Office of Planning and Environment Federal Transit Administration, Transit Noise and Vibration Impact Assessment , FTA-VA-90-1003-06, 2006.

**XIII. POPULATION AND HOUSING.**

Would the project:	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Induce substantial growth in an area either directly (for example, by proposing new homes and businesses) or indirectly (e.g. through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Significance Criteria**

Impacts of the proposed project on population and housing will be considered significant if the following criteria are exceeded:

- The demand for temporary or permanent housing exceeds the existing supply.
- The proposed project produces additional population, housing or employment inconsistent with adopted plans either in terms of overall amount or location.

**DISCUSSION**

**XIII. a)** Quemetco may need 4 new employees to mitigate the fugitive dust from their maintenance activities.

As for Exide, they will need 28 new permanent employees to do their mitigate their fugitive dust from maintenance activities and implement housekeeping measures. Exide may also need emporary construction workers to install the new APC. All construction and operation would occur on-site. The proposed project is not anticipated to generate any significant effects, either direct or indirect, on the district's population or population distribution. Human population within the jurisdiction of the SCAQMD is anticipated to grow regardless of implementing PAR 1420.1. It is expected that new permanent workers and any construction workers would use workers from the local labor pool in Southern California. Any new equipment is expected to be operated by qualified existing employees at the affected facility. As such, PAR 1420.1 would not result in changes in population densities or induce significant growth in population.

**XIII. b)** Because the proposed project affects construction and operation of control equipment at one existing lead-acid battery recycling facility, PAR 1420.1 is not expected to result in the creation of any industry that would affect population growth, directly or indirectly, induce the construction of single- or multiple-family units, or require the displacement of people elsewhere.

Based upon these considerations, significant adverse population and housing impacts are not anticipated. Therefore, no further analysis or mitigation measures are required or necessary.



**XIV. PUBLIC SERVICES.**

Would the proposal result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Impacts on public services will be considered significant if the project results in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response time or other performance objectives.

**Discussion**

**XIV. a) & b)** PAR 1420.1 would not involve the use of new flammable or combustible materials. As a result, no new fire hazards or increased use of hazardous materials would be introduced at the affected facilities that would require additional emergency responders such as police or fire departments or additional demand from these resources. Thus, no new demands for fire or police protection are expected from PAR 1420.1.

**XIV. c)** As noted in the “Population and Housing” discussion, implementation of the proposed project would not have a significant impact on inducing growth. Exide’s new employees and construction workers would come from the local labor pool in southern California. As a result, PAR 1420.1 would have no direct or indirect effects on population growth in the district. Therefore, there would be no increase in local population and thus no impacts are expected to local schools as a result of PAR 1420.1.

**XIV. d)** Because the proposed project involves requirements that are similar to existing operations already in place at an existing facility and the facilities are already heavily regulated, PAR 1420.1 is not expected to require the need for additional government services. The required air permits for the new APC equipment to comply with PAR 1420.1 are expected to be issued by SCAQMD existing staff. Enforcement of PAR 1420.1 is expected to be performed by the existing SCAQMD inspectors for these facilities. Further, the proposed project would not result in the need for new or physically altered government facilities in order to maintain acceptable

service ratios, response times, or other performance objectives. There will be no increase in population and, therefore, no need for physically altered government facilities.

Based upon these considerations, significant adverse public services impacts are not anticipated and, therefore, no further analysis is required or necessary.

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**XV. RECREATION.**

	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment or recreational services?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Impacts to recreation will be considered significant if:

- The project results in an increased demand for neighborhood or regional parks or other recreational facilities.
- The project adversely affects existing recreational opportunities.

**DISCUSSION**

**XV. a) & b)** As previously discussed under “Land Use,” there are no provisions in PAR 1420.1 that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments; no land use or planning requirements would be altered by the proposed project. Further, implementation of PAR 1420.1 would not increase the use of existing neighborhood and regional parks or other recreational facilities or include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment because the proposed project is not expected to induce population growth.

Based upon the above considerations, significant adverse recreation impacts are not anticipated and, therefore, no further analysis is required or necessary.

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**XVI. SOLID/HAZARDOUS WASTE.**

Would the project:	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Comply with federal, state, and local statutes and regulations related to solid and hazardous waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Significance Criteria**

The proposed project impacts on solid/hazardous waste will be considered significant if the following occurs:

- The generation and disposal of hazardous and non-hazardous waste exceeds the capacity of designated landfills.

**DISCUSSION**

**XVI.a)** Landfills are permitted by the local enforcement agencies with concurrence from the California Department of Resources Recycling and Recovery (CalRecycle). Local agencies establish the maximum amount of solid waste which can be received by a landfill each day and the operational life of a landfill. PAR 1420.1 would generate additional waste from the disposal of contaminated concrete and soils that is discussed in further detail in the following paragraphs.

**Construction**  
**Quemetco**

No construction is expected at Quemetco to comply with PAR 1420.1.

**Exide**

In order to comply with PAR 1420.1 ambient concentration limit, Exide may need to construct a new APC. If Exide chooses this compliance method, Exide would then need to demolish some of their existing surfaces and grade their site for new foundations. Solid waste would be expected from the construction of the APC equipment. Approximately, 8,150 cubic yards of material (two acres of area approximately two yards deep) would result from the demolished storm water retention pond, if a WESP is installed. Construction material is not expected to be contaminated, since the surfaces are required to be cleaned daily according to the existing Rule 1420.1.

Based on the 2012 AQMP, there is approximately 116,796 tons per day of landfill space available in the district. A calculation of the demolished material is expected to be 8,150 cubic yards (1,013 ton/day)<sup>21</sup>. This is 0.8 % of the available daily landfill capacity. Therefore, the construction’s solid waste is not expected to be a significant adverse impact. In addition, most of the demolition material from the storm water retention pond is expected to be concrete, which

<sup>21</sup> (8,150 yd<sup>3</sup> x 150 lb/ft<sup>3</sup> x 27 ft<sup>3</sup>/yd<sup>3</sup> x ton/2,000 lb)/16.3 days = 1,013 ton/day

can be recycled. Therefore, the amount of material disposed would be much less than 1,013 tons per day.

Exide has contaminated soils of metals (primarily arsenic and lead) throughout the facility. If contaminated soils were found during construction, Exide has a legal requirement to follow proper soil handling procedures (see Section VIII. HAZARDS AND HAZARDOUS MATERIALS. for more details).

**APC Operation**

Additional lead would be recovered from the new APC wastewater stream, which is called slurry. The slurry would return to the lead-acid battery recovery process to be recycled; therefore, most of the lead from the wastewater treatment system would not be disposed at solid waste landfills.

Increased maintenance of baghouses will ensure that they operate properly and decrease the likelihood of tears or holes forming which would require replacement. Therefore, no increased disposal of baghouse filters is expected.

Therefore, the increase in hazardous waste disposal from PAR 1420.1 is expected to be less than significant for operational hazardous waste disposal.

**XVI.b)** The affected facilities' operators currently dispose spent lead from their respective wastewater treatment systems. It is assumed that facility operators at the affected facility comply with all applicable local, state, or federal waste disposal regulations.

Implementing PAR 1420.1 is not expected to interfere with any affected facility's ability to comply with applicable local, state, or federal waste disposal regulations. Since no solid/hazardous waste impacts were identified, no mitigation measures are required or necessary.

Based upon these considerations, significant adverse solid/hazardous waste impacts are not anticipated. Therefore, no further analysis or mitigation measures are required or necessary.

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**XVII. TRANSPORTATION/TRAFFIC.**

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### **Significance Criteria**

Impacts on transportation/traffic will be considered significant if any of the following criteria apply:

- Peak period levels on major arterials are disrupted to a point where level of service (LOS) is reduced to D, E or F for more than one month.
- An intersection's volume to capacity ratio increase by 0.02 (two percent) or more when the LOS is already D, E or F.
- A major roadway is closed to all through traffic, and no alternate route is available.
- The project conflicts with applicable policies, plans or programs establishing measures of effectiveness, thereby decreasing the performance or safety of any mode of transportation.
- There is an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.
- The demand for parking facilities is substantially increased.
- Water borne, rail car or air traffic is substantially altered.
- Traffic hazards to motor vehicles, bicyclists or pedestrians are substantially increased.
- The need for more than 350 employees
- An increase in heavy-duty transport truck traffic to and/or from the facility by more than 350 truck round trips per day
- Increase customer traffic by more than 700 visits per day.

### **DISCUSSION**

**XVII. a) & b)** As noted in the "Discussion" sections of the other environmental topics, compliance with PAR 1420.1 is expected to require construction activities for control equipment. It has been estimated to need 17 haul trucks and seven construction worker trips on a peak construction day (during the fill phases). Construction onsite is not expected to affect on-site traffic or parking. The additional 17 construction trips are less than the significance threshold of 350 round trips, therefore construction activities are not expected to cause a significance adverse impact to traffic or transportation.

Exide is expected to double their vehicle sweeping and water tank mileage; however, this is not expected to affect traffic or on-site parking. All operational requirements are expected to occur on-site. PAR 1420.1 would result in the addition of 32 automobile worker trips from both facilities each day. The addition of 32 automobile daily trips are not expected to result in transportation/traffic impacts.

**XVII. c)** The affected facility is not near any airports or private airstrips. The closest airport or airstrip is the Hawthorne Municipal Airport, which is 9.6 miles from the affected facility. Any actions that would be taken to comply with the proposed project are not expected to influence or affect air traffic patterns or navigable air space, since no new structures or equipment are expected to enter air space used by aircraft. Thus, PAR 1420.1 would not result in a change in air traffic patterns including an increase in traffic levels or a change in location that results in substantial safety risks.

**XVII. d) & e)** The proposed project does not involve construction of any roadways or other transportation design features, so there would be no change to current roadway designs that could increase traffic hazards. The siting of the affected facility is consistent with surrounding land uses and traffic/circulation in the surrounding areas of the affected facility. Thus, the proposed project is not expected to substantially increase traffic hazards or create incompatible

uses at or adjacent to the affected facility. Emergency access at the affected facility is not expected to be impacted by the proposed project. Further, each affected facility is expected to continue to maintain their existing emergency access. Since PAR 1420.1 involves short-term construction activities and operational of control equipment is not expected to increase vehicle trips, the proposed project is not expected to alter the existing long-term circulation patterns. The proposed project is not expected to require a modification to circulation, thus, no long-term impacts on the traffic circulation system are expected to occur.

**XVII. f)** The affected facilities would still be expected to comply with, and not interfere with adopted policies, plans, or programs supporting alternative transportation (e.g. bicycles or buses). Since all PAR 1420.1 compliance activities would occur on-site, PAR 1420.1 would not hinder compliance with any applicable alternative transportation plans or policies.

Based upon these considerations, significant adverse transportation/traffic impacts are not anticipated. Therefore, no further analysis or mitigation measures are required or necessary.

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**XVIII. MANDATORY FINDINGS OF SIGNIFICANCE.**

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**DISCUSSION**

**XVIII. a)** As discussed in the “Biological Resources” section, PAR 1420.1 is not expected to significantly adversely affect plant or animal species or the habitat on which they rely because any construction and operational activities associated with affected sources are expected to occur entirely within the boundaries of existing developed facilities in areas that have been greatly disturbed and that currently do not support any species of concern or the habitat on which they rely. PAR 1420.1 is not expected to reduce or eliminate any plant or animal species or destroy prehistoric records of the past.

**XVIII. b)** Based on the foregoing analyses, PAR 1420.1 would not result in significant adverse project-specific environmental impacts. Potential adverse impacts from implementing PAR 1420.1 would not be "cumulatively considerable" as defined by CEQA Guidelines §15064(h)(1) for any environmental topic because there are no, or only minor incremental project-specific impacts that were concluded to be less than significant. Per CEQA Guidelines §15064(h)(4), the mere existing of significant cumulative impacts caused by other projects alone shall not

constitute substantial evidence that the proposed project's incremental effects are cumulative considerable. SCAQMD cumulative significant thresholds are the same as project-specific significance thresholds. Therefore, there is no potential for significant adverse cumulative or cumulatively considerable impacts to be generated by the proposed project for any environmental topic.

**XVIII. c)** Based on the foregoing analyses, PAR 1420.1 are not expected to cause adverse effects on human beings for any environmental topic. As previously discussed in environmental topics I through XVIII, the proposed project has no potential to cause significant adverse environmental effects. Therefore, no further analysis or mitigation measures are required or necessary.

## **APPENDICES**

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**APPENDIX A**

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**PROPOSED AMENDED RULE 1420.1**

(Adopted November 5, 2010)(Amended January 10, 2014)  
(Amended March 7, 2014)  
(PAR 1420.1v January 2015)

**PROPOSED  
AMENDED RULE  
1420.1.**

**EMISSION STANDARDS FOR LEAD AND OTHER  
TOXIC AIR CONTAMINANTS FROM LARGE LEAD-  
ACID BATTERY RECYCLING FACILITIES**

(a) Purpose

- (1) The purpose of this rule is to protect public health by reducing exposure and emissions of lead from large lead-acid battery recycling facilities, and to help ensure attainment and maintenance of the National Ambient Air Quality Standard for Lead. The purpose of this rule is to also protect public health by reducing arsenic, benzene, and 1,3-butadiene exposure and emissions from these facilities.

(b) Applicability

- (1) This rule applies to all persons who own or operate a lead-acid battery recycling facility that has processed more than 50,000 tons of lead a year in any one of the five calendar years prior to November 5, 2010, or annually thereafter, hereinafter a large lead-acid battery recycling facility. Applicability shall be based on facility lead processing records required under subdivision (m) of this rule, and Rule 1420 – Emissions Standards for Lead. Compliance with this rule shall be in addition to other applicable rules such as Rules 1407 and 1420.

(c) Definitions

For the purposes of this rule, the following definitions shall apply:

- (1) **AGGLOMERATING FURNACE** means a furnace used to melt flue dust that is collected from an emission control device, such as a baghouse, into a solid mass.
- (2) **AMBIENT AIR** for purposes of this rule means outdoor air.
- (3) **ARSENIC** means the oxides and other compounds of the element arsenic included in particulate matter, vapors, and aerosols.
- (4) **BATTERY BREAKING AREA** means the plant location at which lead-acid batteries are broken, crushed, or disassembled and separated into components.
- (5) **BENZENE** means an organic compound with chemical formula C<sub>6</sub>H<sub>6</sub> and

- Chemical Abstract Service number 71-43-2.
- (6) 1,3-BUTADIENE means an organic compound with chemical formula C<sub>4</sub>H<sub>6</sub> and Chemical Abstract Service number 106-99-0.
  - (7) DRYER means a chamber that is heated and that is used to remove moisture from lead-bearing materials before they are charged to a smelting furnace.
  - (8) DRYER TRANSITION PIECE means the junction between a dryer and the charge hopper or conveyor, or the junction between the dryer and the smelting furnace feed chute or hopper located at the ends of the dryer.
  - (9) DUCT SECTION means a length of duct including angles and bends which is contiguous between two or more process devices (e.g., between a furnace and heat exchanger; baghouse and scrubber; scrubber and stack; etc.).
  - (10) EMISSION COLLECTION SYSTEM means any equipment installed for the purpose of directing, taking in, confining, and conveying an air contaminant, and which at minimum conforms to design and operation specifications given in the most current edition of *Industrial Ventilation, Guidelines and Recommended Practices*, published by the American Conference of Government and Industrial Hygienists, at the time a complete permit application is filed with the District.
  - (11) EMISSION CONTROL DEVICE means any equipment installed in the ventilation system of a point source or emission collection system for the purposes of collecting and reducing emissions of arsenic, benzene, lead, 1,3-butadiene, or any other toxic air contaminant.
  - (12) FUGITIVE LEAD-DUST means any solid particulate matter containing lead that is in contact with ambient air and has the potential to become airborne.
  - (13) FURNACE AND REFINING/CASTING AREA means any area of a large lead-acid battery recycling facility in which:
    - (a) Smelting furnaces or agglomerating furnaces are located; or
    - (b) Refining operations occur; or
    - (c) Casting operations occur.
  - (14) LEAD-ACID BATTERY RECYCLING FACILITY means any facility, operation, or process in which lead-acid batteries are disassembled and recycled into elemental lead or lead alloys through smelting.
  - (15) LEAD means elemental lead, alloys containing elemental lead, or lead compounds, calculated as elemental lead.
  - (16) LEEWARD WALL means the furthest exterior wall of a total enclosure that is opposite the windward wall.

- (17) MAINTENANCE ACTIVITY means any of the following activities conducted outside of a total enclosure that generates or has the potential to generate fugitive lead-dust:
- (a) building construction, renovation, or demolition;
  - (b) replacement or repair of refractory, filter bags, or any internal or external part of equipment used to process, handle, or control lead-containing materials;
  - (c) replacement of any duct section used to convey lead-containing exhaust;
  - (d) metal cutting or welding that penetrates the metal structure of any equipment, and its associated components, used to process lead-containing material, such that lead dust within the internal structure or its components can become fugitive lead-dust;
  - (e) resurfacing, grading, repair, or removal of ground, pavement, concrete, or asphalt; or
  - (f) soil disturbances including but not limited to soil sampling, soil remediation, or activities where soil is moved, removed, and/or stored.
- (18) MATERIALS STORAGE AND HANDLING AREA means any area of a large lead-acid battery recycling facility in which lead-containing materials including, but not limited to, broken battery components, reverberatory furnace slag, flue dust, and dross, are stored or handled between process steps. Areas may include, but are not limited to, locations in which materials are stored in piles, bins, or tubs, and areas in which material is prepared for charging to a smelting furnace.
- (19) MEASURABLE PRECIPITATION means any on-site measured rain amount of greater than 0.01 inches in any complete 24-hour calendar day (i.e., midnight to midnight).
- (20) PARTIAL ENCLOSURE for purposes of this rule means a structure comprised of walls or partitions on at least three sides or three-quarters of the perimeter that surrounds areas where maintenance activity is conducted, in order to prevent the generation of fugitive lead-dust.
- (21) POINT SOURCE means any process, equipment, or total enclosure used in a large lead-acid battery recycling facility, including, but not limited to, agglomerating furnaces, dryers, smelting furnaces and refining kettles, whose emissions pass through a stack or vent designed to direct or control

- the exhaust flow prior to release into the ambient air.
- (22) PROCESS means using lead or lead-containing materials in any operation including, but not limited to, the charging of lead-containing materials to smelting furnaces, lead refining and casting operations, and lead-acid battery breaking.
  - (23) RENOVATION for purposes of this rule means the altering of a building or permanent structure, or the removal of one or more of its components that generates fugitive lead-dust.
  - (24) SENSITIVE RECEPTOR means any residence including private homes, condominiums, apartments, and living quarters; education resources such as preschools and kindergarten through grade twelve (k-12) schools; daycare centers; and health care facilities such as hospitals or retirement and nursing homes. A sensitive receptor includes long term care hospitals, hospices, prisons, and dormitories or similar live-in housing.
  - (25) SLAG means the inorganic material by-product discharged, in molten state, from a lead smelting furnace that has a lower specific gravity than lead metal and contains lead compounds. This shall include, but is not limited to, lead sulfate, lead sulfide, lead oxides, and lead carbonate consisting of other constituents charged to a smelting furnace which are fused together during the pyrometallurgical process.
  - (26) SMELTING means the chemical reduction of lead compounds to elemental lead or lead alloys through processing in high temperatures greater than 980° C.
  - (27) SMELTING FURNACE means any furnace where smelting takes place including, but not limited to, blast furnaces, reverberatory furnaces, rotary furnaces, and electric furnaces.
  - (28) STATIC DIFFERENTIAL FURNACE PRESSURE means the difference between the absolute internal pressure of the smelting furnace ( $P_f$ , in inches water column) and the absolute atmospheric pressure in the immediate vicinity outside the smelting furnace ( $P_a$ , in inches water column) and is calculated as follows:  $P_f - P_a$ .
  - (29) TOTAL ENCLOSURE means a permanent containment building/structure, completely enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-off), with limited openings to allow access and egress for people and vehicles, that is free of cracks, gaps, corrosion, or other deterioration that could cause or result in fugitive lead-



dust.

- (30) TOXIC AIR CONTAMINANT is an air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a present or potential hazard to human health.
- (31) WINDWARD WALL means the exterior wall of a total enclosure which is most impacted by the wind in its most prevailing direction determined by a wind rose using data required under paragraph (j)(5) of this rule, or other data approved by the Executive Officer.

(d) General Requirements

The owner or operator of a large lead-acid battery recycling facility shall be subject to the following requirements:

(1) Ambient Air Concentration of Lead

Prior to Emissions shall not be discharged into the atmosphere which contribute to ambient air concentrations of lead that exceed the following:

Effective Date	Ambient Air Concentration of Lead, micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ), averaged over 30 consecutive days
Prior to January 1, 2016	0.150 $\mu\text{g}/\text{m}^3$
On and after January 1, 2016	0.110 $\mu\text{g}/\text{m}^3$
On and after January 1, 2017	0.100 $\mu\text{g}/\text{m}^3$

The ambient air concentrations of lead shall be determined by monitors pursuant to subdivision (j) or at any District-installed monitor.

- (2)
- (2) Maintain and operate total enclosures pursuant to subdivision (e) and lead point source emission control devices pursuant to paragraphs (f)(1) and (f)(6) through (f)(8).
  - (A) Submit complete permit applications for all construction and necessary equipment within 30 days of November 5, 2010.
  - (B) Complete all construction within 180 days of receiving Permit to Construct approvals
  - (C)
- (3) On and after July 1, 2011 sSubmit a Compliance Plan if emissions are discharged into the atmosphere which contribute to ambient air concentrations of lead or arsenic that exceed the ambient concentrations in paragraph (g)(1).
- (4) The owner or operator of a large lead-acid battery recycling facility shall:

- (A) Within 30 days of January 10, 2014, submit a Compliance Plan Schedule to the Executive Officer for review and approval to ensure that the facility will comply with the January 1, 2015 total facility mass emissions limits for arsenic, benzene, and 1,3-butadiene point sources specified in paragraph (f)(2). The Compliance Plan Schedule shall be subject to plan fees specified in Rule 306 and include:
- (i) a list of all control measures to be implemented that includes a description of the control technology, the equipment that will be affected, the affected pollutants, the anticipated reductions, and the dates the measures will be implemented; and
  - (ii) a schedule that identifies dates for completion of engineering design(s), equipment procurement, construction, demolition (if any), equipment installation, and testing for each control measure described pursuant to clause (d)(4)(A)(i).
- (B) Submit complete permit applications for all equipment specified in the Compliance Plan Schedule that requires a District permit within 90 days of January 10, 2014.
- (C) Complete all construction within 180 days of receiving Permit to Construct approvals from the Executive Officer.
- (D) The owner or operator of a large lead-acid battery recycling facility shall not be subject to requirements of subparagraphs (d)(4)(A) through (d)(4)(C) if the most recent District-approved source tests, conducted no earlier than January 1, 2011, show that the facility is meeting all of the emission limits specified in paragraph (f)(2).
- (5) **Ambient Air Concentration of Arsenic**  
On and after February 1, 2014, the owner or operator of a large lead-acid battery recycling facility shall not allow emissions to be discharged into the atmosphere which contribute to an ambient air concentration of arsenic that exceeds 10.0 nanograms per cubic meter ( $\text{ng}/\text{m}^3$ ) averaged over a 24-hour time period as determined by monitors pursuant to subdivision (j) or by any District-installed monitor. An exceedance of  $10.0 \text{ ng}/\text{m}^3$  averaged over a 24-hour period shall be based on the average of the analysis of two sample results on the same filter. A second analysis is required if the first sample exceeds  $10.0 \text{ ng}/\text{m}^3$ .

- (6) If the ambient air concentration of arsenic is determined to exceed 10.0 ng/m<sup>3</sup> averaged over a 24-hour time period as calculated pursuant to paragraph (d)(5), then the owner or operator shall notify the Executive Officer in writing within 72 hours of when the facility knew or should have known it exceeded the ambient air arsenic concentration of 10.0 ng/m<sup>3</sup> averaged over a 24-hour time period.
- (A) Notify the Executive Officer in writing within 72 hours of when the facility knew or should have known it exceeded the ambient air arsenic concentration of 10.0
  - (B) Comply with the monitoring and sampling requirements in paragraph (j)(10)
- (7) The owner or operator of a large lead-acid battery recycling facility shall fund and participate in a multi-metal continuous emissions monitoring system (CEMS) demonstration program to continuously monitor lead, arsenic, and other metals emitted from a stack within its facility for a period specified by the District. Participation and funding of the multi-metals CEMS demonstration program shall require the owner or operator to:
- (A) Submit payment to the District for District personnel or its contractor to assemble, install, maintain, train, test, analyze, and decommission a multi-metals CEMS demonstration program not to exceed the following amounts and schedule:
    - (i) \$63,500 by April 1, 2014; and an additional
    - (ii) \$143,225 by September 1, 2014
  - (B) Provide continuous facility access to District personnel and its contractors to deliver, assemble, install, monitor, maintain, test, analyze, and decommission a multi-metals CEMS;
  - (C) Provide the necessary location and infrastructure for the multi-metals CEMS including:
    - (i) siting location with sufficient spacing, clearance, and structural support;
    - (ii) electric power circuits;
    - (iii) compressed air;
    - (iv) sampling port(s);
    - (v) access to wireless modem connection for data retrieval;
    - (vi) any necessary moving or lifting equipment and personnel to operate such equipment in order to install the system; and

(vii) day to day instrument and equipment operation.

(e) Total Enclosures

(1) Enclosure Areas

The owner or operator of a large lead-acid battery recycling facility shall enclose within a total enclosure the following areas in groups or individually:

- (A) Battery breaking areas;
- (B) Materials storage and handling areas, excluding areas where unbroken lead-acid batteries and finished lead products are stored;
- (C) Dryer and dryer areas including transition pieces, charging hoppers, chutes, and skip hoists conveying any lead-containing material;
- (D) Smelting furnaces and smelting furnace areas charging any lead-containing material;
- (E) Agglomerating furnaces and agglomerating furnace areas charging any lead-containing material; and
- (F) Refining and casting areas.

(2) Total Enclosure Emissions Control

The owner or operator of a large lead-acid battery recycling facility shall vent each total enclosure to an emission collection system that ducts the entire gas stream which may contain lead to a lead emission control device and the entire gas stream which may contain arsenic to an arsenic emission control device, respectively, pursuant to subdivision (f).

(3) Total Enclosure Ventilation

Ventilation of the total enclosure at any opening including, but not limited to, vents, windows, passages, doorways, bay doors, and roll-ups shall continuously be maintained at a negative pressure of at least 0.02 mm of Hg (0.011 inches H<sub>2</sub>O) measured pursuant to paragraph (e)(4).

(4) Digital Differential Pressure Monitoring Systems

The owner or operator of a large lead-acid battery recycling facility shall install, operate, and maintain a digital differential pressure monitoring system for each total enclosure as follows:

- (A) A minimum of one building digital differential pressure monitoring system shall be installed and maintained at each of the following three walls in each total enclosure having a total ground surface area of 10,000 square feet or more:
  - (i) The leeward wall;

- (ii) The windward wall; and
  - (iii) An exterior wall that connects the leeward and windward wall at a location defined by the intersection of a perpendicular line between a point on the connecting wall and a point on its furthest opposite exterior wall, and intersecting within plus or minus ten ( $\pm 10$ ) meters of the midpoint of a straight line between the two other monitors specified in clauses (e)(4)(A)(i) and (e)(4)(A)(ii). The midpoint monitor shall not be located on the same wall as either of the other two monitors described in clauses (e)(4)(A)(i) or (e)(4)(A)(ii).
- (B) A minimum of one building digital differential pressure monitoring system shall be installed and maintained at the leeward wall of each total enclosure that has a total ground surface area of less than 10,000 square feet.
  - (C) Digital differential pressure monitoring systems shall be certified by the manufacturer to be capable of measuring and displaying negative pressure in the range of 0.01 to 0.2 mm Hg (0.005 to 0.11 inches H<sub>2</sub>O) with a minimum increment of measurement of plus or minus 0.001 mm Hg (0.0005 inches H<sub>2</sub>O).
  - (D) Digital differential pressure monitoring systems shall be equipped with a continuous strip chart recorder or electronic recorder approved by the Executive Officer. If an electronic recorder is used, the recorder shall be capable of writing data on a medium that is secure and tamper-proof. The recorded data shall be readily accessible upon request by the Executive Officer. If software is required to access the recorded data that is not readily available to the Executive Officer, a copy of the software, and all subsequent revisions, shall be provided to the Executive Officer at no cost. If a device is required to retrieve and provide a copy of such recorded data, the device shall be maintained and operated at the facility.
  - (E) Digital differential pressure monitoring systems shall be calibrated in accordance with manufacturer's specifications at least once every 12 calendar months or more frequently if recommended by the manufacturer.
  - (F) Digital differential pressure monitoring systems shall be equipped

with a backup, uninterruptible power supply to ensure continuous operation of the monitoring system during a power outage.

(5) In-draft Velocity

The in-draft velocity of the total enclosure shall be maintained at  $\geq 300$  feet per minute at any opening including, but not limited to, vents, windows, passages, doorways, bay doors, and roll-ups. In-draft velocities for each total enclosure shall be determined by placing an anemometer, or an equivalent device approved by the Executive Officer, at the center of the plane of any opening of the total enclosure.

(f) Point Source Emissions Controls

The owner or operator of a large lead-acid battery recycling facility shall vent emissions from each lead, arsenic, benzene, and 1,3-butadiene point source to a lead, arsenic, benzene, and 1,3-butadiene emission control device, respectively, that meets the requirements of this subdivision and is approved in writing by the Executive Officer.

(1) The owner or operator of a large lead-acid battery recycling facility shall:

(A) Prior to January 1, 2016, meet a total facility mass lead emissions from all lead point sources not to exceed 0.045 pounds of lead per hour. On and after January 1, 2016, meet a total facility mass lead emissions from all lead point sources not to exceed 0.023 pounds of lead per hour. The maximum emission rate for any single lead point source shall not exceed 0.010 pounds of lead per hour. The total facility and maximum emission rates shall be determined using the most recent approved source tests conducted on behalf of the facility or the District; and

(B) Install a secondary lead emission control device that controls lead emissions from the exhaust of the primary lead emission control device used for a dryer. The secondary lead emission control device shall be fitted with dry filter media, and the secondary lead control device shall only be used to vent the primary lead emission control device used for the dryer. An alternative secondary lead control method that is equally or more effective for the control of lead emissions may be used if a complete application is submitted as part of the permit application required under paragraph (d)(2) and approved by the Executive Officer.

(2) The mass emissions from all arsenic, benzene, and 1,3-butadiene point

sources at a large lead-acid battery recycling facility shall meet the following hourly emissions thresholds for the dates specified:

- (A) No later than 60 days after January 10, 2014, the total facility emission rate for a large lead-acid battery recycling facility from all point sources shall not exceed 0.00285 pound of arsenic per hour.
  - (B) No later than January 1, 2015, the total facility emission rate for a large lead-acid battery recycling facility from all point sources shall not exceed 0.00114 pound of arsenic per hour.
  - (C) No later than January 1, 2015, the total emission rate for a large lead-acid battery recycling facility from all point sources excluding point sources from emission control devices on total enclosures shall not exceed the following:
    - (i) 0.0514 pound of benzene per hour; and
    - (ii) 0.00342 pound of 1,3-butadiene per hour.
  - (D) The point source mass emission rates shall be determined based on the average of triplicate samples, using the most recent District-approved source tests conducted by the facility or the District, pursuant to subdivision (k).
  - (E) For purposes of this rule, only point sources that have a source test result of greater than 1 part per billion shall be included in determining the total facility mass emission rates for benzene and 1,3-butadiene.
- (3) No later than 90 days after January 10, 2014, the The owner or operator of a large lead-acid battery recycling facility shall, for each smelting furnace, install, calibrate, operate and maintain a monitoring device that has been approved by the Executive Officer pursuant to paragraph (f)(4). The monitoring device shall measure and record the static differential furnace pressure in inches water column. Each smelting furnace shall be operated such that static differential furnace pressure, in inches of water column averaged over 30 minutes, is maintained at a value -0.02 or more negative. A reverberatory furnace may be operated at an alternative static differential furnace pressure if the owner or operator can demonstrate that it can achieve emission reductions that are equivalent to or better than those achieved when operating at a pressure of -0.02 or more negative. Demonstration shall be based on source test protocols and source tests conducted pursuant to the requirements of subdivision (k) and approved by the Executive Officer. The

alternative static differential furnace pressure shall not exceed 0.4 inches water column and must be approved by the Executive Officer in the Continuous Furnace Pressure Monitoring Plan of paragraph (f)(4). For the purposes of this requirement, the owner or operator shall ensure that the monitoring device:

- (A) Continuously measures the instantaneous static differential furnace pressure;
  - (B) Has a resolution of at least 0.01 inches water column;
  - (C) Has an increment of measurement of 0.01 inches water column;
  - (D) Has a range from -10 inches to +10 inches water column for the measuring device;
  - (E) Is equipped with ports to allow for periodic calibration in accordance with manufacturer's specifications;
  - (F) Is calibrated according to manufacturer's specifications at a frequency of not less than twice every calendar year;
  - (G) Is equipped with a continuous data acquisition system (DAS). The DAS shall record the data output from the monitoring device at a frequency of not less than once every sixty (60) seconds;
  - (H) Generates a data file from the computer system interfaced with each DAS each calendar day. The data file shall be saved in electronic ASCII character format, Microsoft Excel (xls orxlsx) format, PDF format, or other format as approved by the Executive Officer. The file shall contain a table of chronological date and time and the corresponding data output value from the monitoring device in inches of water column. The operator shall prepare a separate data file each day showing the 30-minute average pressure readings recorded by this device each calendar day; and
  - (I) Is maintained in accordance with manufacturer's specifications.
- (4) No later than 30 days after January 10, 2014, the The owner or operator of a large lead-acid battery recycling facility shall submit to the Executive Officer for approval an application for a Continuous Furnace Pressure Monitoring (CFPM) Plan for the monitoring device required in paragraph (f)(3). The CFPM Plan shall contain the information identified in Appendix 3 of this rule and is subject to the fees specified in Rule 306.
- (5) The Executive Officer shall notify the owner or operator in writing whether the CFPM Plan is approved or disapproved. Determination of approval



status shall be based on, at a minimum, submittal of information that satisfies the criteria set forth in paragraph (f)(4). If the CFPM Plan is disapproved, the owner or operator shall resubmit the CFPM Plan, subject to plan fees specified in Rule 306, within 30 calendar days after notification of disapproval of the CFPM Plan. The resubmitted CFPM Plan shall include any information necessary to address deficiencies identified in the disapproval letter. It is a violation of the rule for a facility not to have an approved CFPM Plan after the second denial. If the resubmitted CFPM Plan is denied, the operator or owner may appeal the denial by the Executive Officer to the Hearing Board pursuant to Rule 216 – Appeals and Rule 221 - Plans.

- (6) For any emission control device that uses filter media other than a filter bag(s), including, but not limited to, HEPA and cartridge-type filters, the filter(s) used shall be rated by the manufacturer to achieve a minimum of 99.97% capture efficiency for 0.3 micron particles.
- (7) For any emission control device that uses a filter bag(s), the filter bag(s) used shall be polytetrafluoroethylene membrane-type, or any other material that is equally or more effective for the control of lead emissions, and approved for use by the Executive Officer.
- (8) Each emission collection system and emission control device subject to this subdivision shall, at minimum, be inspected, maintained, and operated in accordance with the manufacturer's specifications.
- (9) The owner or operator of a large lead-acid battery recycling facility shall comply with the curtailment requirements in subdivision (o) if the total facility mass lead emissions from all lead point sources exceeds the limits specified in subparagraph (f)(1)(A), and/or the total facility emission rate from all arsenic point sources exceeds the limits specified in subparagraph (f)(2)(A) or (f)(2)(B).

(g) Compliance Plan

- (1) On and after July 1, 2011, the owner or operator of a large lead-acid battery recycling facility shall submit a Compliance Plan if emissions are discharged into the atmosphere which contribute to ambient air concentrations of lead or arsenic that exceed the following:

Air Contaminant	Effective Date	Ambient Air Concentration
Lead	Prior to January 1, 2016	0.120 $\mu\text{g}/\text{m}^3$ , averaged over

		30 consecutive days
	On and after January 1, 2016	0.110 $\mu\text{g}/\text{m}^3$ , averaged over 30 consecutive days
	On and after January 1, 2017	0.100 $\mu\text{g}/\text{m}^3$ , averaged over 30 consecutive days
Arsenic	On and after February 1, 2014	8 $\text{ng}/\text{m}^3$ , averaged over a 24 hour time period as determined under paragraph (g)(8)

averaged over any 30 consecutive days, or an ambient air concentration of arsenic that The ambient air concentrations of lead and arsenic shall be determined by monitors pursuant to subdivision (j) or at any District-installed monitor.

- (2) The owner of operator of a large lead-acid battery recycling facility shall notify the Executive Officer in writing within 72 hours of when the facility knew or should have known it exceeded an ambient air concentration of lead or arsenic pursuant to paragraph (g)(1).. Notification shall only be required the first time the ambient air concentration of lead or arsenic exceeds the concentration limits in paragraph (g)(1) for each monitor;
- (3) r operator of a large lead-acid battery recycling facility shall submit, within 30 calendar days of exceeding an ambient air concentration of lead or arsenic pursuant to paragraph (g)(1), a complete Compliance Plan to the Executive Officer for review and approval, subject to plan fees as specified in Rule 306. The Compliance Plan shall, at a minimum, include the following:
  - (A) A description of additional lead and/or arsenic emission reduction measures to achieve the ambient air concentration of lead of 0.110  $\mu\text{g}/\text{m}^3$  averaged over any 30 consecutive days, or the ambient air concentration of arsenic of 10.0  $\text{ng}/\text{m}^3$  averaged over a 24-hour time period, as required under paragraph ( d)(5), including, but not limited to, requirements for the following:
    - (i) Housekeeping, inspection, and maintenance activities;
    - (ii) Additional total enclosures;
    - (iii) Modifications to lead and arsenic emission control devices;
    - (iv) Installation of multi-stage lead and arsenic emission control

- devices;
- (v) Process changes including reduced throughput limits;
  - (vi) Conditional curtailments including, at a minimum, information specifying the curtailed processes, process amounts, and length of curtailment; and
  - (vii) Identification of lead and/or arsenic reduction measures to be implemented relative to increasing ranges of exceedance levels of the ambient air concentration limits.
- (B) The locations within the facility and method(s) of implementation for each lead and/or arsenic reduction measure of subparagraph (g)(2)(A); and
- (C) An implementation schedule for each lead and/or arsenic emission reduction measure of subparagraph (g)(2)(A) to be implemented if lead and/or arsenic emissions discharged from the facility contribute to ambient air concentrations of lead that exceed the requirements in paragraph (d)(1) , or ambient air concentrations of arsenic that exceed 10.0 ng/m<sup>3</sup> averaged over a 24-hour time period, measured at any monitor pursuant to subdivision (j) or at any District-installed monitor. The schedule shall also include a list of the lead and/or arsenic reduction measures of subparagraph (g)(2)(A) that can be implemented immediately, prior to plan approval.
- (4) The Executive Officer shall notify the owner or operator in writing whether the Compliance Plan is approved or disapproved. Determination of approval status shall be based on, at a minimum, submittal of information that satisfies the criteria set forth in paragraph (g)(2), and whether the plan is likely to lead to avoiding future exceedances of the ambient air concentration levels set forth in paragraph (g)(1). If the Compliance Plan is disapproved, the owner or operator shall resubmit the Compliance Plan, subject to plan fees specified in Rule 306, within 30 calendar days after notification of disapproval of the Compliance Plan. The resubmitted Compliance Plan shall include any information necessary to address deficiencies identified in the disapproval letter. It is a violation of the rule for a facility not to have an approved Compliance Plan after the second denial. If the resubmitted Compliance Plan is denied, the operator or owner may appeal the denial by the Executive Officer to the Hearing Board under Rule 216 – Appeals and Rule 221 - Plans.

- (5) exceed the requirements in paragraph (d)(1) or an ambient air concentration of arsenic of  $10.0 \text{ ng/m}^3$  averaged over a 24-hour time period as determined in paragraph (d)(5), measured at any monitor pursuant to subdivision (j) or at any District-installed monitor.
  - (6) The owner or operator may make a request to the Executive Officer to modify or update an approved Compliance Plan.
  - (7) The owner or operator shall update the Compliance Plan 12 months from January 10, 2014 and annually thereafter, in order to update measures that have been implemented and to identify any new measures that can be implemented.
  - (8) An exceedance of an ambient air concentration of arsenic of  $8.0 \text{ ng/m}^3$  averaged over a 24-hour period shall be based on the average of the analysis of two sample results on the same filter. A second analysis is required if the first sample exceeds  $8.0 \text{ ng/m}^3$ .
- (h) Housekeeping Requirements
- No later than 30 days after November 5, 2010, the owner or operator of a large lead-acid battery recycling facility shall control fugitive lead-dust by conducting all of the following housekeeping practices:
- (1) Clean by wet wash or a vacuum equipped with a filter(s) rated by the manufacturer to achieve a 99.97% capture efficiency for 0.3 micron particles in a manner that does not generate fugitive lead-dust, the following areas at the specified frequencies, unless located within a total enclosure vented to a lead emission control device. Days of measurable precipitation in the following areas occurring within the timeframe of a required cleaning frequency may be counted as a cleaning:
    - (A) Monthly cleanings of roof tops on structures  $\leq 45$  feet in height that house areas associated with the storage, handling or processing of lead-containing materials; and
    - (B) Quarterly cleanings, no more than 3 calendar months apart, of roof tops on structures  $> 45$  feet in height that house areas associated with the storage, handling or processing of lead-containing materials; and
    - (C) Weekly cleanings of all areas where lead-containing wastes generated from housekeeping activities are stored, disposed of, recovered or recycled.
    - (D) Initiate immediate cleaning, no later than one hour, after any maintenance activity or event including, but not limited to, accidents,

process upsets, or equipment malfunction, that causes deposition of fugitive lead-dust onto areas specified in subparagraph (h)(1)(A) through (h)(1)(C). Immediate cleanings of roof tops shall be completed within 72 hours if the facility can demonstrate that delays were due to safety or timing issues associated with obtaining equipment required to implement this requirement.

- (2) Inspect all total enclosures and facility structures that house, contain or control any lead point source or fugitive lead-dust emissions at least once a month. Any gaps, breaks, separations, leak points or other possible routes for emissions of lead or fugitive lead-dust to ambient air shall be permanently repaired within 72 hours of discovery. The Executive Officer may approve a request for an extension beyond the 72-hour limit if the request is submitted before the limit is exceeded.
- (3) Upon receipt, any lead-acid battery that is cracked or leaking shall be immediately sent to the battery breaking area for processing or stored pursuant to paragraph (h)(6).
- (4) Pave, concrete, asphalt, or otherwise encapsulate all facility grounds as approved by the Executive Officer. Facility grounds used for plant life that are less than a total surface area of 100 square feet shall not be subject to encapsulation. Facility grounds requiring removal of existing pavement, concrete, asphalt or other forms of encapsulation, necessary for maintenance purposes shall not require encapsulation while undergoing work, and shall be re-encapsulated immediately after all required work is completed. All work shall be conducted in accordance with subdivision (i).
- (5) Remove any weather cap installed on any stack that is a source of lead emissions.
- (6) Store all materials capable of generating any amount of fugitive lead-dust including, but not limited to, slag and any other lead-containing waste generated from housekeeping requirements of subdivision (h) and maintenance activities of subdivision (i), in sealed, leak-proof containers, unless located within a total enclosure.
- (7) Transport all materials capable of generating any amount of fugitive lead-dust including, but not limited to, slag and any other waste generated from housekeeping requirements of subdivision (h), within closed conveyor systems or in sealed, leak-proof containers, unless located within a total enclosure.

- (8) Initiate removal of any lead-containing material, including sludge, from the entire surface area of any surface impoundment pond or reservoir holding storm water runoff or spent water from housekeeping activities within 1 hour after the water level is  $\leq 1$  inch above the bottom of the pond or reservoir. Removal of lead-containing material is required to be completed as soon as possible, and no later than six calendar days after the time initiation of the removal was required. Thereafter, surfaces shall be washed down weekly in a manner that does not generate fugitive lead-dust until the pond or reservoir is used again for holding water.
  - (9) **Maintain and Use an Onsite Mobile Vacuum Sweeper or Vacuum**  
The owner or operator of a large lead-acid battery recycling facility shall maintain an onsite mobile vacuum sweeper that is in compliance with District Rule 1186, or a vacuum equipped with a filter(s) rated by the manufacturer to achieve a 99.97% capture efficiency for 0.3 micron particles to conduct the following sweeping activities:
    - (A) Vacuum sweep all paved, concreted or asphalted facility areas subject to vehicular or foot traffic three times per day and occurring at least once per operating shift with each event not less than four hours apart, unless located within a total enclosure vented to a lead control device.
    - (B) Immediately vacuum sweep any area specified in subparagraph (h)(9)(A), no later than one hour after any maintenance activity or event including accidents, process upsets, or equipment malfunction that results in the deposition of fugitive lead-dust.
    - (C) Vacuum sweeping activities specified in paragraph (h)(9) shall not be required during days of measurable precipitation.
  - (10) Except when inside a total enclosure, all lead or arsenic containing trash and debris shall be placed in covered containers that remain covered at all times except when trash or debris is actively transferred. Trash and debris containers shall be free of liquid or dust leaks.
  - (11) Post signs at all entrances and truck loading and unloading areas indicating a plant-wide speed limit of 5 miles per hour.
- (i) **Maintenance Activity**
    - (1) Beginning November 5, 2010, the owner or operator of a large lead-acid battery recycling facility shall conduct any maintenance activity in a negative air containment enclosure, vented to a permitted negative air

machine equipped with a filter(s) rated by the manufacturer to achieve a 99.97% capture efficiency for 0.3 micron particles, that encloses all affected areas where fugitive lead-dust generation potential exists, unless located within a total enclosure or approved by the Executive Officer. Any maintenance activity that cannot be conducted in a negative air containment enclosure due to physical constraints, limited accessibility, or safety issues when constructing or operating the enclosure shall be conducted:

- (A) In a partial enclosure, barring conditions posing physical constraints, limited accessibility, or safety issues;
  - (B) Using wet suppression or a vacuum equipped with a filter(s) rated by the manufacturer to achieve a 99.97% capture efficiency for 0.3 micron particles, at locations where the potential to generate fugitive lead-dust exists prior to conducting and upon completion of the maintenance activity. Wet suppression or vacuuming shall also be conducted during the maintenance activity barring safety issues;
  - (C) While collecting 24-hour samples at monitors for every day that maintenance activity is occurring notwithstanding paragraph (j)(2);
  - (D) Shall be stopped immediately when instantaneous wind speeds are  $\geq$  20 mph. Maintenance work may be continued if it is necessary to prevent the release of lead emissions;
  - (E) All concrete or asphalt cutting or drilling performed outside of a total enclosure shall be performed under 100% wet conditions; and
  - (F) Grading of soil shall only be performed on soils sufficiently wet to prevent fugitive dust.
- (2) Store or clean by wet wash or a vacuum equipped with a filter(s) rated by the manufacturer to achieve a 99.97% capture efficiency for 0.3 micron particles, all lead-contaminated equipment and materials used for any maintenance activity immediately after completion of work in a manner that does not generate fugitive lead-dust.

(j) **Ambient Air Monitoring and Sampling Requirements**

Prior to January 1, 2011, ambient air monitoring and sampling shall be conducted pursuant to District Rule 1420. No later than January 1, 2011, the owner or operator of a large lead-acid battery recycling facility shall conduct ambient air monitoring and sampling as follows:

- (1) Collect samples from a minimum of four sampling sites. Locations for sampling sites shall be approved by the Executive Officer.

- (A) Locations for sampling sites shall be based on maximum expected ground level lead and/or arsenic concentrations, at or beyond the property line, as determined by Executive Officer-approved air dispersion modeling calculations and emission estimates from all lead and arsenic point sources and fugitive lead-dust and arsenic-dust sources, and other factors including, but not limited to, population exposure and seasonal meteorology.
  - (B) The Executive Officer may require one or more of the four sampling sites to be at locations that are not based on maximum ground level lead and/or arsenic concentrations, and that are instead at locations at or beyond the property line that are representative of upwind or background concentrations.
  - (C) Sampling sites at the property line may be located just inside the fence line on facility property if logistical constraints preclude placement outside the fence line at the point of maximum expected ground level lead and/or arsenic concentrations.
- (2) Collect ambient lead and arsenic samples as follows:
- (A) daily as 24-hour, midnight-to-midnight, samples at all sites .
  - (B) Arsenic samples shall be collected daily as 24-hour, midnight-to-midnight, samples collected at all sites.
  - (C) If a 24-hour, midnight-to-midnight sample was not collected due to a monitor malfunction or other occurrence beyond the control of the facility, the owner or operator shall:
    - (i) Report with a notification made to 1-800-CUT-SMOG within 2 hours of knowing that the 24-hour, midnight-to-midnight sample was not collected providing the facility name, name of the monitor, the date of the occurrence, and the reason that the 24-hour midnight-to-midnight sample was not collected; and
    - (ii) The operator shall submit a 24-hour, midnight-to-midnight sample for the following day such that the owner or operator of a large lead-acid battery recycling facility shall not miss a 24-hour, midnight-to-midnight sample for more than one day over a consecutive 30 day period.
- (3) Submit samples collected pursuant to paragraphs (j)(1) and (j)(2) to a laboratory approved under the SCAQMD Laboratory Approval Program for



analysis within three calendar days of collection and calculate ambient lead and arsenic concentrations for individual 24-hour samples within 15 calendar days of the end of the calendar month in which the samples were collected. Duplicate samples shall be made available and submitted to the District upon request by the Executive Officer.

- (4) Sample collection for lead and/or arsenic shall be conducted using Title 40, CFR 50 Appendix B - *Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High Volume Method)*, or U.S. EPA-approved equivalent methods, and sample analysis for lead shall be conducted using Title 40, CFR 50 Appendix G - *Reference Method for the Determination of Lead in Suspended Particulate Matter Collected from Ambient Air*, or U.S. EPA-approved equivalent methods. Sample analysis for arsenic shall be conducted using U.S. EPA Compendium Method IO-3.5 - *Determination of Metals in Ambient Particulate Matter Using Inductively Coupled Plasma/Mass Spectrometry (ICP/MS)*; *EPA Compendium Method IO-3.5; In IO Compendium of Methods for the Determination of Inorganic Compounds in Ambient Air*. Alternatively, sample analysis for arsenic may be conducted using the District's *Standard Operating Procedure for The Determination of Metals in Ambient Particulate Matter by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)*.
- (5) Continuously record wind speed and direction data at all times using equipment approved by the Executive Officer at a minimum of one location and placement approved by the Executive Officer.
- (6) Ambient air quality monitoring shall be conducted by persons approved by the Executive Officer and sampling equipment shall be operated and maintained in accordance with U.S. EPA-referenced methods.
- (7) All ambient air quality monitoring systems required by this subdivision shall be equipped with a backup, uninterruptible power supply to ensure continuous operation of the monitoring system during a power outage.
- (8) Cleaning activities including, but not limited to, wet washing and misting, that result in damage or biases to samples collected shall not be conducted within 10 meters of any sampling site required under this subdivision.
- (9) On and after January 1, 2012, If the owner or operator of a large lead-acid battery recycling facility exceeds an ambient air lead concentration pursuant to paragraph (d)(1), the owner or operator shall comply with the curtailment provisions of subdivision (o).

- (A)
  - (B) The 60 consecutive-day period shall be restarted for any subsequent exceedance.
  - (C) Comply with the curtailment requirements of subdivision (p).
- (10) On and after February 1, 2014, if If a large lead-acid battery recycling facility exceeds an ambient air concentration of arsenic of 10.0 ng/m<sup>3</sup> pursuant to paragraph(d)(5), the owner or operator shall comply with the curtailment requirements of subdivision (o).
- (A)
  - (B) Restart the 60-day consecutive period for any subsequent exceedance.
  - (C) Comply with the curtailment requirements of subdivision (p).
- (11) The owner or operator of a large lead-acid battery recycling facility shall retain lead and arsenic samples collected pursuant to this subdivision for one year. The samples shall be stored in an individually sealed container and labeled with the applicable monitor and date. The samples shall be provided to the Executive Officer within one business day upon request.
- (k) Source Tests
- (1) The owner or operator of a large lead-acid battery recycling facility shall conduct a source test of all lead point sources at least annually to demonstrate compliance with the mass emissions standards specified in subdivision (f). If the results of the most recent source test for a lead point source demonstrating compliance with the lead emission standard of subdivision (f) demonstrate emissions of 0.0012 pounds of lead per hour or less, the next test for that lead point source shall be performed no later than 24 months after the date of the most recent test.
  - (2) Beginning January 10, 2014, the The owner or operator of a large lead-acid battery recycling facility shall conduct a source test for all arsenic point sources, and all benzene and 1,3-butadiene point sources, excluding emission control devices on total enclosures, at least annually to demonstrate compliance with the mass emissions standards specified in subdivision (f). If the results of the most recent source test demonstrating compliance with the arsenic, benzene, and 1,3-butadiene mass emissions standards of subdivision (f) are below the emission rates specified in subparagraphs (k)(2)(A) through (k)(2)(C), the next source test for those point sources shall be performed no later than 24 months after the date of the most recent source

- test.
- (A) 0.000860 pound of arsenic per hour;
  - (B) 0.0386 pound of benzene per hour; and
  - (C) 0.00257 pound of 1,3-butadiene per hour.
- (3) The owner or operator of a large lead-acid battery recycling facility with an existing The owner or operator of a large lead-acid battery recycling facility with a new or modified lead control device with initial start-up on or after November 5, 2010 shall conduct the initial source test for it within 60 calendar days after initial start-up.
- (4) Prior to conducting a source test pursuant to paragraph (k)(1), (k)(2), (k)(3), or (k)(13), the owner or operator of a large lead-acid battery recycling facility shall submit a pre-test protocol to the Executive Officer for approval at least 60 calendar days prior to conducting the source test. The pre-test protocol shall include the source test criteria of the end user and all assumptions, required data, and calculated targets for testing the following:
- (A) Target arsenic, benzene, lead, or 1,3-butadiene mass emission standard;
  - (B) Preliminary target pollutant analytical data;
  - (C) Planned sampling parameters; and
  - (D) Information on equipment, logistics, personnel, and other resources necessary for an efficient and coordinated test.
- (5) The owner or operator of a large lead-acid battery recycling facility shall notify the Executive Officer in writing one week prior to conducting any source test required by paragraph (k)(1), (k)(2), (k)(3), or (k)(13).
- (6) The owner or operator of a large lead-acid battery recycling facility shall notify the Executive Officer within three business days, including Mondays, of when the facility knew or should have known of any source test result that exceeds any of the emission standards specified in subdivision (f). Notifications shall be made to 1-800-CUT-SMOG and followed up in writing with the results of the source tests within seven (7) days of notification.
- (7) Source tests shall be conducted while operating at a minimum of 80% of equipment permitted capacity and in accordance with any of the following applicable test methods:
- (A) SCAQMD Method 12.1 - *Determination of Inorganic Lead Emissions from Stationary Sources Using a Wet Impingement Train*

- (B) ARB Method 12 – *Determination of Inorganic Lead Emissions from Stationary Sources*
  - (C) EPA Method 12 – *Determination of Inorganic Lead Emissions from Stationary Sources*
  - (D) ARB Method 436 – *Determination of Multiple Metal Emissions from Stationary Sources*
  - (E) EPA Method TO-15 – *Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially-Prepared Canisters and Analyzed By Gas Chromatography/Mass Spectrometry (GC/MS)*
  - (F) CARB Method 410A – *Determination of Benzene from Stationary Sources (Low Concentration Gas Chromatographic Technique)*
  - (G) CARB Method 422.102 – *Determination of Volatile Organic Compounds (VOCs) in Emissions from Stationary Sources*
- (8) The average of triplicate samples, obtained according to approved test methods specified in paragraph (k)(7), shall be used to determine compliance or to report source test results required under paragraph (k)(13).
  - (9) The operator may use alternative or equivalent source test methods as defined in U.S. EPA 40 CFR 60.2, approved in writing by the Executive Officer, in addition to the Air Resources Board or the U.S. EPA, as applicable.
  - (10) The operator shall use a test laboratory approved under the SCAQMD Laboratory Approval Program for the source test methods cited in this subdivision. If there is no approved laboratory, then approval of the testing procedures used by the laboratory shall be granted by the Executive Officer on a case-by-case basis based on SCAQMD protocols and procedures.
  - (11) When more than one source test method or set of source test methods are specified for any testing, the application of these source test methods to a specific set of test conditions is subject to approval by the Executive Officer. In addition, a violation established by any one of the specified source test methods or set of source test methods shall constitute a violation of the rule.
  - (12) An existing source test conducted on and after January 1, 2009 for lead emission control devices existing before November 5, 2010 may be used as the initial source test specified in paragraph (k)(1) to demonstrate compliance with the control standard of subdivision (f) upon Executive Officer approval. The source test shall meet, at a minimum, the following

criteria:

- (A) The test is the most recent conducted since January 1, 2009;
  - (B) The test demonstrated compliance with the control standard of subdivision (f); and
  - (C) The test is representative of the method to control emissions currently in use; and
  - (D) The test was conducted using applicable and approved test methods specified in paragraphs (k)(7), (k)(9), or (k)(10).
- (13) Beginning January 10, 2014, the owner or operator of a large lead-acid battery recycling facility shall conduct two source tests for benzene and 1,3-butadiene emissions from all emission control devices on total enclosures as follows:
- (A) First source test conducted no later than March 1, 2014.
  - (B) Second source test conducted no later than September 1, 2014.
  - (C) Source tests on all emission control devices on total enclosures must be completed within a time period of 72 hours or less.
- (14) Testing conducted by the facility, by the District, or by a contractor acting on behalf of the District or the facility to determine compliance with this rule shall be performed according to the most recent District-approved test protocol for the same purpose or compounds.
- (15) Reports from source testing conducted pursuant to subdivision (k) shall be submitted to the District in 90 days or less after completion of testing.
- (l) **New Facilities**
- The owner or operator of a large lead-acid battery recycling facility beginning construction or operations on and after November 5, 2010 shall:
- (1) Demonstrate to the satisfaction of the Executive Officer that the facility is not located in an area that is zoned for residential or mixed use; and
  - (2) Demonstrate to the satisfaction of the Executive Officer that the facility is not located within 1,000 feet from the property line of a sensitive receptor, a school under construction, park, or any area that is zoned for residential or mixed use. The distance shall be measured from the property line of the new facility to the property line of the sensitive receptor.
  - (3) Submit complete permit applications for all equipment required by this rule prior to beginning construction or operations, and otherwise on or before the time required by District rules.

- (m) Recordkeeping
  - (1) The owner or operator of a large lead-acid battery recycling facility shall keep records of the following:
    - (A) Daily records indicating amounts of lead-containing material processed, including, but not limited to, purchase records, usage records, results of analysis, or other District-approved verification to indicate processing amounts;
    - (B) Results of all ambient air lead and arsenic monitoring, meteorological monitoring, and other data specified by subdivision (j);
    - (C) Records of housekeeping activities completed as required by subdivision (h), maintenance activities of subdivision (i), and emission control device inspection and maintenance requirements of paragraph (f)(8), including the name of the person performing the activity, and the dates and times on which specific activities were completed; and
    - (D) Records of unplanned shutdowns of any smelting furnace including the date and time of the shutdown, description of the corrective measures taken, and the re-start date and time.
  - (2) The owner or operator of a large lead-acid battery recycling facility shall maintain all records for five years, at least two years onsite.
  
- (n) Reporting
  - (1) Ambient Air Monitoring Reports
    - (A) Beginning no later than The owner or operator of a large lead-acid battery recycling facility shall report by the 15<sup>th</sup> of each month to the Executive Officer, the results of all ambient air lead and wind monitoring for each preceding month, or more frequently if determined necessary by the Executive Officer. The report shall include the results of individual 24-hour samples and 30-day rolling averages for each day within the reporting period.
    - (B) Beginning no later than March 15, 2014, the The owner or operator of a large lead-acid battery recycling facility shall report by the 15<sup>th</sup> of each month to the Executive Officer, the results of all ambient air arsenic and wind monitoring for each preceding month, or more frequently if determined necessary by the Executive Officer and the

owner or operator is notified in writing of the required frequency.

- (C) Any exceedances of ambient air concentrations specified in paragraphs (d)(1), and (d)(5) shall be reported with a notification made to the 1-800-CUT-SMOG within 24 hours of receipt of the completed sample analysis required in paragraph (j)(3), followed by a written report to the Executive Officer no later than three calendar days after the notification. The written report shall include the causes of the exceedance and the specific corrective actions implemented.
  - (D) On and after July 1, 2015, the owner or operator of a large lead-acid battery recycling facility shall report in writing to the Executive Officer within 72 hours of when the facility knew or should have known that the ambient air concentration of lead was greater than  $0.300 \mu\text{g}/\text{m}^3$  for any 24-hour sample the following information:
    - (i) Date of the occurrence;
    - (ii) Name of the monitor;
    - (iii) Ambient lead concentration at the monitor for the 24 hour sample;
    - (iv) Potential cause or causes of the occurrence; and
    - (v) Potential remedies to prevent the reoccurrence.
- (2) Shutdown, Turnaround, and Maintenance Activity Notification
- The owner or operator of a large lead-acid battery recycling facility shall:
- (A) Notify the Executive Officer and the public within one hour after an unplanned shutdown of any emission control device has occurred, regardless of potential emissions. If the unplanned shutdown involves a breakdown pursuant to Rule 430, the breakdown notification report required by Rule 430 shall serve in lieu of this notification to the Executive Officer. The notification shall include the following information:
    - (i) Date and time the unplanned shutdown of the emission control device(s) occurred;
    - (ii) Description of the shutdown emission control device and the processes and/or equipment vented by the emission control device;
    - (iii) Description of when the processes and/or equipment vented by the emission control device were shutdown, including

- expected shutdown time;
  - (iv) Reason why the emission control device was shutdown;
  - (v) Total duration of the unplanned shutdown, if known; and
  - (vi) Facility contact name and phone number for further information regarding the unplanned shutdown.
- (B) Beginning May 1, 2014, if an unplanned shutdown of any emission control device occurs, and the reason for the unplanned shutdown cannot be determined within the one-hour reporting period under subparagraph (n)(2)(A), the owner or operator shall investigate the reason for the unplanned shutdown and notify the Executive Officer of the reason for the unplanned shutdown within 5 business days of the event. If the reason for the unplanned shutdown is still not known within 5 business days of the event, the owner or operator shall notify the Executive Officer within 5 business days of the event and:
- (i) Use an independent third party approved by the Executive Officer to conduct an investigation at the facility to determine the reason for the unplanned shutdown of any emission control device subject to this rule, which includes but is not limited to:
    - (I) Physically inspecting the control equipment and surrounding portions of the facility which may provide information to understand the reason for the unplanned shutdown of emission control equipment; and
    - (II) Reviewing equipment maintenance and operation records, logs, and other documentation which may provide information to understand the reason for the unplanned shutdown of emission control equipment;
  - (ii) Use an independent third party approved by the Executive Officer to inspect all equipment repaired or replaced in response to the unplanned shutdown of emission control equipment, to ensure affected control equipment can operate properly; and
  - (iii) Within 30 calendar days of the reported unplanned shutdown, provide a written report to the Executive Officer and the



Director of the California Department of Toxic Substances Control. The owner or operator shall notify the Executive Officer if an approved independent third party is not available for use, or the list of approved independent third parties has not yet been developed by the Executive Officer, and shall submit the written report 30 days from when an approved third party is available. The written report shall include the following information:

- (I) Date of the unplanned shutdown of emission control equipment;
  - (II) Reason for the unplanned shutdown of emission control equipment;
  - (III) List of all equipment repaired or replaced in response to the unplanned shutdown and corrective actions taken to prevent recurrence of the unplanned shutdown of emission control equipment; and
  - (IV) Written verification that the affected emission control equipment is operational. If the affected equipment is not operational, provide an approximate date the subject equipment is expected to be operational.
- (iv) The owner or operator shall be responsible for reimbursement to the District for any and all expenses incurred by the independent third-party investigator in the investigation, inspection, and generation of a written report to determine the cause of an unplanned shutdown of any emission control equipment subject to this rule, as required by subparagraph (n)(2)(B). The owner or operator shall reimburse the District within 30 days of notification from the Executive Officer that payment is due.
- (v) The reimbursement specified in clause (n)(2)(B)(iv) shall not exceed \$12,000 per third-party investigation.
- (C) Notify the Executive Officer and the public at least ten calendar days prior to a planned turnaround or shutdown of any smelting furnace, battery breaker, or emission control device subject to this rule that results in arsenic, benzene, 1,3-butadiene, or lead emissions. The notification shall specify the subject equipment and the start and end

- date of the turnaround or shutdown period.
- (D) Notify the Executive Officer at least ten calendar days prior to the beginning of maintenance activity, as defined in paragraph (c)(17), that is conducted routinely on a monthly or less frequent basis. The notification and report required under subparagraph (n)(2)(F) shall include, at a minimum, the following:
    - (i) Dates, times, and locations of activities to be conducted;
    - (ii) Description of activities;
    - (iii) Name of person(s)/company conducting the activities;
    - (iv) Lead abatement procedures, including those specified in subdivision (i), to be used to minimize fugitive lead-dust emissions; and
    - (v) Date of expected re-start of equipment.
  - (E) Notify the public at least ten calendar days prior to the beginning of building construction, renovation, or demolition, and resurfacing, repair, or removal of ground pavement, concrete or asphalt if such activities are conducted outside of a total enclosure and generate fugitive lead-dust. The notification shall include, at a minimum, the following:
    - (i) Dates, times, and locations of activities to be conducted;
    - (ii) Description of activities;
    - (iii) Date of expected re-start of equipment.
  - (F) Provide the notification to the Executive Officer required under subparagraphs (n)(2)(A), (n)(2)(C), and (n)(2)(D) to 1-800-CUT-SMOG followed by a written notification report to the Executive Officer no later than three business days, including Mondays, after the unplanned shutdown occurred.
  - (G) Provide notification to the public required under subparagraphs (n)(2)(A), (n)(2)(C), and (n)(2)(E) through a facility contact or pre-recorded notification center that is accessible 24 hours a day, 7 days a week, and through electronic mail using a list of recipients provided by the Executive Officer. Another method of notification to the public may be used provided it is approved by the Executive Officer.
  - (H) Install a sign indicating the phone number for the facility contact or pre-recorded notification center that meets the following

requirements, unless otherwise approved in writing by the Executive Officer:

- (i) Installed within 50 feet of the main entrance of the facility and in a location that is visible to the public;
  - (ii) Measures at least 48 inches wide by 48 inches tall;
  - (iii) Displays lettering at least 4 inches tall with text contrasting with the sign background; and
  - (iv) Located between 6 and 8 feet above grade from the bottom of the sign.
- (I) Install a sign indicating the phone number for the facility contact or pre-recorded notification center that meets the following requirements, unless otherwise approved in writing by the Executive Officer:
- (i) Installed at all entrances and at intervals of 330 feet or less along the property line of the site or along the perimeter of the facility;
  - (ii) Measures at least 30 inches wide by 30 inches tall;
  - (iii) Displays lettering at least 2 inches tall with text contrasting with the sign background; and
  - (iv) Located between 6 and 8 feet above grade from the bottom of the sign; and
  - (v) In addition to the phone number, the sign shall also display the following information:

Caution

Lead-Acid Battery Recycling Facility

Call before digging

- (J) Notify the Executive Officer at least ten calendar days prior to a planned breach or within one hour after an unplanned breach to a total enclosure such that it no longer meets the definition of a total enclosure pursuant to paragraph (c)(29). The notification shall include the following information:
- (i) Date and time of planned or unplanned breach to the total enclosure;
  - (ii) Explanation of breach to the total enclosure;
  - (iii) Total duration or if not known, estimated duration of breach to the total enclosure; and

- (iv) Facility contact name and phone number for further information.
- (3) Initial Facility Status Report
  - (A) Initial Facility Status Report Due Date

The owner or operator of a large lead-acid battery recycling facility existing before November 5, 2010 shall submit an initial facility status report to the Executive Officer no later than January 1, 2011. Large lead-acid battery recycling facilities beginning construction or initial operations after November 5, 2010 shall submit the initial compliance status report upon start-up.
  - (B) The initial facility status report shall contain the information identified in Appendix 1.
- (4) Ongoing Facility Status Report

The owner or operator of a large lead-acid battery recycling facility shall submit a summary report to the Executive Officer to document the ongoing facility status.

  - (A) Frequency of Ongoing Facility Status Reports

The report shall be submitted annually on or before February 1 for all sources and shall include information covering the preceding calendar year.
  - (B) The content of ongoing facility status reports shall contain the information identified in Appendix 2.
- (5) Adjustments to the Timeline for Submittal and Format of Reports

The Executive Officer may adjust the timeline for submittal of periodic reports, allow consolidation of multiple reports into a single report, establish a common schedule for submittal of reports, or accept reports prepared to comply with other state or local requirements. Adjustments shall provide the same information and shall not alter the overall frequency of reporting.
- ~~(e) Lead Emission Rate Feasibility Study~~
- (o) Curtailment Requirements
  - (1) On and after February 1, 2014, the The owner or operator of a large lead-acid battery recycling facility shall implement the following mandatory daily process curtailments if emissions are discharged into the atmosphere which

contribute to monitored ambient air concentrations of lead, as determined pursuant to paragraph (d)(1), and/or ambient air concentrations of arsenic, as determined pursuant to paragraph (d)(5), that exceed the thresholds listed below in Table 1:

**Table 1 – Process Curtailments Based on Ambient Air Concentrations of Lead and/or Arsenic**

<b>Air Contaminant</b>	<b>Monitored Ambient Air Concentration</b>	<b>Reduction in Feedstock Charged to Reverberatory Furnace</b>
Lead	Prior to January 1, 2016: >0.150 – 0.230 µg/m <sup>3</sup> On and after January 1, 2016: >0.110 – 0.230 µg/m <sup>3</sup> On and after January 1, 2017: >0.100 – 0.230 µg/m <sup>3</sup>	15%
	>0.230 – 0.300 µg/m <sup>3</sup>	25%
	>0.300 – 0.375 µg/m <sup>3</sup>	50%
	>0.375 µg/m <sup>3</sup>	75%
Arsenic	>10.0 – 15.0 ng/m <sup>3</sup>	15%
	>15.0 – 20.0 ng/m <sup>3</sup>	25%
	>20.0 – 25.0 ng/m <sup>3</sup>	50%
	>25.0 ng/m <sup>3</sup>	75%

- (A) The process curtailments for exceedances of the ambient air concentration of lead thresholds in Table 1 shall remain in effect until the monitoring results at each affected monitoring station are at or below the ambient lead concentration limits specified in paragraph (d)(1) for a period of 30 consecutive days, or the monitoring results at each affected monitoring station are at or below 0.100 µg/m<sup>3</sup> for at least 10 consecutive days and no other monitor exceeds the thresholds specified in subdivision (d); and
- (B) The process curtailments for exceedances of the ambient air concentration of arsenic thresholds in Table 1 shall remain in effect until the monitoring results at each affected monitoring station are at or below 10.0 ng/m<sup>3</sup> of arsenic averaged over a 24-hour time period, for a period of at least 30 consecutive days.
- (2) The owner or operator of a large lead-acid battery recycling facility shall implement the following mandatory daily process curtailments if the total facility mass emissions from all lead and/or arsenic point sources exceed the thresholds listed below in Table 2:

**Table 2 – Process Curtailments Based on Total Facility Mass Lead and/or Arsenic Emissions From All Point Sources**

Effective Date	Air Contaminant	Total Facility Mass Emission Rate (lbs/hour)	Reduction in Feedstock Charged to Reverberatory Furnace
On and after January 10, 2014	Lead	Prior to January 1, 2016 >0.045 – 0.0675	15%
		On and after January 1, 2016 >0.023 – 0.0675	
		>0.0675 – 0.09	25%
		>0.09 – 0.1125	50%
No later than 60 days after January 10, 2014 to December 31, 2014	Arsenic	>0.00285 – 0.00428	15%
		>0.00428 – 0.00570	25%
		>0.00570 – 0.00713	50%
		>0.00713	75%
On and after January 1, 2015	Arsenic	>0.00114 – 0.00171	15%
		>0.00171 – 0.00228	25%
		>0.00228 – 0.00285	50%
		>0.00285	75%

- (A) The process curtailments in Table 2 shall remain in effect until the facility demonstrates compliance using the most recent District-approved source tests conducted by the facility or the District, pursuant to subdivision (k).
- (3) Reductions in feedstock charged to the reverberatory furnace required by paragraphs (o)(1) or (o)(2) shall be based on the daily average of materials charged to the reverberatory furnace over the previous 90 days of operation prior to when the facility knew or should have known of the exceedance;
- (4) The process curtailments in Table 1 and Table 2 shall begin within 48 hours of the time when the owner or operator receives sampling results indicating an exceedance of any lead and/or arsenic threshold listed in Table 1 or Table

2; and

- (5) The owner or operator of a large lead-acid battery recycling facility may temporarily exceed the mandatory process curtailments specified in Table 1 of paragraph (o)(1) and Table 2 of paragraph (o)(2), only for the period of time required to perform source tests to demonstrate compliance with this rule.

(p) Severability

If any provision of this rule is held by judicial order to be invalid, or invalid or inapplicable to any person or circumstance, such order shall not affect the validity of the remainder of this rule, or the validity or applicability of such provision to other persons or circumstances.



## **Appendix 1 – Content of Initial Facility Status Reports**

Initial compliance status reports shall contain, at a minimum, the following information:

1. Facility name, District Facility ID number, facility address, owner/operator name, and telephone number.
2. The distance from the property line of the facility to the property line of the nearest commercial/industrial building and sensitive receptor.
3. Worker and sensitive receptor locations, if they are located within one-quarter mile from the center of the facility.
4. Building parameters
  - Stack heights in feet (point sources); or
  - Building area in square feet (volume sources).
5. A description of the types of lead processes performed at the facility.
6. The following information shall be provided for each of the last five calendar years prior to November 5, 2010:
  - Annual amount of lead-containing material processed;
  - The maximum and average daily and monthly operating schedules;
  - The maximum and average daily and monthly lead-processing rates for all equipment and processes;
  - The maximum and average daily and annual emissions of lead from all emission points and fugitive lead-dust sources.
7. The approximate date of intended source tests for all lead emission control devices, as required by subdivision (k) of this rule.
8. Engineering drawings, calculations or other methodology to demonstrate compliance with paragraphs (d)(1) and (k).
9. Air dispersion modeling calculations using procedures approved by the Executive Officer to determine the location of sampling sites as required by subdivision (j).
10. All information necessary to demonstrate means of compliance with subdivision (j).
11. The name, title, and signature of the responsible official certifying the accuracy of the report, attesting to whether the source has complied with the provisions of this rule.
12. The date of the report.

## **Appendix 2 – Content of Ongoing Facility Status Reports**

Ongoing facility status reports shall, at a minimum, contain the following information:

1. Facility name, District Facility ID number, facility address, owner/operator name, and telephone number.
2. The beginning and ending dates of the calendar year for the reporting period.
3. The following information shall be provided for each of the last 12 calendar months of the reporting period:
  - Annual amounts of lead-containing material processed;
  - The maximum and average daily and monthly lead-processing rates for all equipment and processes;
  - The maximum and average daily and annual emissions of lead from all emission points and fugitive lead-dust sources.
4. Worker and sensitive receptor distances, if they are located within ¼ of mile from the center of the facility and facility maximum operating schedule, if changed since submittal of the initial compliance status report or prior year's ongoing compliance status and emission reports.
5. A description of any changes in monitoring, processes, or controls since the last reporting period.
6. The name, title, and signature of the responsible official certifying the accuracy of the report.
7. The date of the report.

### **Appendix 3 – Continuous Furnace Pressure Monitoring (CFPM) Plan**

The CFPM Plan shall, at a minimum, contain the following information:

1. A description of the type and design of the differential pressure monitoring device(s).
2. The specifications of the resolution, increment of measurement, and range of the differential pressure monitoring device(s).
3. A drawing and description of the exact location where each differential pressure monitoring device is to be located.
4. If differential pressure monitoring device(s) are already installed, all available recorded data of the static differential furnace pressure(s) as requested by the Executive Officer.
5. If applicable, the maximum alternative static differential furnace pressure in inches water column that the owner or operator will operate the reverberatory furnace at, and a demonstration that it can achieve emission reductions that are equivalent to or better than those achieved when operating at a pressure of -0.02 or more negative. The alternative static differential furnace pressure shall not exceed 0.4 inches water column.

**APPENDIX B**

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**ASSUMPTIONS AND CALCULATIONS**

**Table B-1  
Demolition Emissions**

<b>Storm Water Retention Pond Demolition</b>	8,150	cubic yards
<b>Demolition Schedule</b>	<b>16</b>	<b>days<sup>a</sup></b>

<b>Equipment Type<sup>a,b</sup></b>	<b>No. of Equipment</b>	<b>hr/day</b>	<b>Crew Size</b>
Concrete/Industrial Saws	1	7.0	9
Excavators	2	7.0	
Tractors/Loaders/Backhoes	2	7.0	
Rubber Tired Dozers	1	4.0	

<b>Construction Equipment Emission Factors</b>									
<b>Equipment Type<sup>c</sup></b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>VOC</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>NO2</b>
	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Concrete/Industrial Saws	0.402	0.526	0.041	0.038	0.092	0.001	59	0.008	0.000
Excavators	0.529	0.830	0.043	0.039	0.114	0.001	120	0.010	0.000
Tractors/Loaders/Backhoes	0.374	0.498	0.034	0.031	0.073	0.001	67	0.007	0.000
Rubber Tired Dozers	1.101	2.381	0.099	0.091	0.284	0.002	238	0.026	0.000

<b>Fugitive Dust Material Handling</b>			
<b>Aerodynamic Particle Size Multiplier<sup>d</sup></b>	<b>Mean Wind Speed<sup>e</sup></b>	<b>Moisture Content<sup>f</sup></b>	<b>Debris Handled<sup>g</sup></b>
	mph		ton/day
0.35	10	2.0	1,013

<b>Construction Vehicle (Mobile Source) Emission Factors<sup>h</sup></b>									
	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>VOC</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>NO2</b>
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Automobile	4.12E-03	3.41E-04	1.04E-04	4.41E-05	4.50E-04	8.22E-06	0.73	2.01E-05	4.83E-06
Heavy-Duty Truck <sup>d</sup>	3.98E-03	1.81E-02	5.40E-04	3.85E-04	7.84E-04	3.64E-05	3.76	3.64E-05	2.56E-04

**Table B-1 (Continued)**  
**Demolition Emissions**

<b>Number of Trips and Trip Length</b>		
<b>Vehicle</b>	<b>No. of One-Way Trips/Day<sup>i</sup></b>	<b>One-Way Trip Length<sup>i</sup> (miles)</b>
Automobile	<b>9</b>	<b>20</b>
Heavy-duty Truck	17	70

<b>Incremental Increase in Combustion Emissions from Construction Equipment</b>									
<b>Equation:</b> Emission Factor (lb/hr) x No. of Equipment x Work Day (hr/day) = Construction Emissions (lb/day)									
<b>Equipment Type</b>	<b>CO</b> lb/day	<b>NOx</b> lb/day	<b>PM10</b> lb/day	<b>PM2.5</b> lb/day	<b>VOC</b> lb/day	<b>SOx</b> lb/day	<b>CO2</b> lb/day	<b>CH4</b> lb/day	<b>NO2</b> lb/day
Concrete/Industrial Saws	2.82	3.68	0.29	0.27	0.64	0.00	409.67	0.06	0.153
Excavator	7.40	11.62	0.60	0.55	1.60	0.02	1673.49	0.14	0.483
Tractors/Loaders/Backhoes	5.24	6.97	0.48	0.44	1.02	0.01	934.38	0.09	0.290
Rubber Tired Dozers	4.40	9.52	0.40	0.36	1.14	0.01	951.25	0.10	0.396
<b>Total</b>	<b>19.9</b>	<b>31.8</b>	<b>1.76</b>	<b>1.62</b>	<b>4.40</b>	<b>0.04</b>	<b>3968.80</b>	<b>0.40</b>	<b>1.32</b>

<b>Incremental Increase in Fugitive Dust Emissions from Construction Equipment</b>			
Material Handling <sup>k</sup> : $(0.0032 \times \text{Aerodynamic Particle Size Multiplier} \times (\text{wind speed (mph)/5})^{1.3}/(\text{moisture content}/2)^{1.4} \times \text{debris handled (ton/day)}) \times (1 - \text{control efficiency}) = \text{PM10 Emissions (lb/day)}$			
<b>Description</b>	<b>Control Efficiency</b> %	<b>PM10<sup>m</sup></b> lb/day	<b>PM2.5<sup>m</sup></b> lb/day
Material Handling (Demolition) <sup>l</sup>	61	1.09	0.23
Material Handling (Debris)	61	1.09	0.23
<b>Total</b>		<b>2.18</b>	<b>0.46</b>

**Table B-1 (Concluded)**  
**Demolition Emissions**

<b>Incremental Increase in Combustion Emissions from Onroad Mobile Vehicles</b>									
<b>Equation:</b> Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)									
<b>Vehicle</b>	<b>CO</b> lb/day	<b>NOx</b> lb/day	<b>PM10</b> lb/day	<b>PM2.5</b> lb/day	<b>VOC</b> lb/day	<b>SOx</b> lb/day	<b>CO2</b> lb/day	<b>CH4</b> lb/day	<b>NO2</b> lb/day
Automobile	1.48	0.12	0.037	0.016	0.162	0.003	262	0.007	0.002
Haul Truck	9.5	43	1.3	0.915	1.9	0.087	8,938	0.087	0.610
<b>Total</b>	<b>9.5</b>	<b>43</b>	<b>1.3</b>	<b>0.915</b>	<b>1.9</b>	<b>0.087</b>	<b>8,938</b>	<b>0.087</b>	<b>0.610</b>

<b>Total Incremental Localized Emissions from Construction Activities</b>							
<b>Sources</b>	<b>CO</b> lb/day	<b>NOx</b> lb/day	<b>PM10</b> lb/day	<b>PM2.5</b> lb/day	<b>VOC</b> lb/day	<b>SOx</b> lb/day	<b>CO2e</b> metric ton/day
Emissions	<b>29</b>	<b>75</b>	<b>5.2</b>	<b>3.0</b>	<b>4.4</b>	<b>0.044</b>	<b>100</b>
<b>Significance Threshold<sup>n</sup></b>	<b>550</b>	<b>100</b>	<b>150</b>	<b>55</b>	<b>75</b>	<b>150</b>	
<b>Exceed Significance?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	

**Notes:**

- The storm water retention area is about an acre in area. RS Means, Building Construction Cost Data, 15th Annual Edition, 2002, Western Edition - 33 to 200 cubic yards per day for 7" - 24" rod reinforced concrete. Average would be 116 cubic yards, which was doubled (two excavators).
- Estimated construction equipment assumed to operate one eight-hour shift per day.
- Emission factors estimated using OFFROAD2011
- USEPA, AP-42, Jan 1995, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
- Mean wind speed - maximum of daily average wind speeds reported in 1981 meteorological data.
- USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28
- USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, p 2-28. Density of concrete 150 pound per cubic foot.  
(8,150 yd<sup>3</sup> x 150 lb/ft<sup>3</sup> x 27 ft<sup>3</sup>/yd<sup>3</sup> x ton/2,000 lb)/16.3 days = 1013 ton/day
- Emission factors estimated using EMFAC2011 for the 2014 fleet year.
- Assumed 30 cubic yd truck capacity [(1013 ton/day x 2,000 lb/ton x cyd/4,050 lb = 1251 cyd)/30 cyd/truck = 17 one-way truck trips/day, concrete debris density is assumed to be 4,050 lb/cyd]
- Assumed trucks travel up 1-5 to district board on way to Buttonwillow or Kettleman. Workers are assumed to travel 20 miles to work.
- USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28.
- EPA suggests using the material handling equation for demolition emission estimates.
- Includes watering at least three times a day per Rule 403 (61% control efficiency)
- SCAQMD significance thresholds

**Table B-2  
Fill Emissions**

<b>Filling Storm Water Retention Pond Area</b>	
<b>Fill Schedule -</b>	<b>50 days<sup>a</sup></b>

<b>Equipment Type<sup>a,b</sup></b>	<b>No. of Equipment</b>	<b>hr/day</b>	<b>Crew Size</b>
Rubber Tired Dozers	2	7.0	7
Tractors/Loaders/Backhoes	2	7.0	

<b>Construction Equipment Emission Factors</b>									
<b>Equipment Type<sup>c</sup></b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>VOC</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>NO2</b>
	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Rubber Tired Dozers	1.101	2.381	0.099	0.091	0.284	0.002	238	0.026	0.099
Tractors/Loaders/Backhoes	0.374	0.498	0.034	0.031	0.073	0.001	67	0.007	0.021

<b>Fugitive Dust Bulldozer Parameters</b>	
<b>Vehicle Speed (mph)<sup>d</sup></b>	<b>Vehicle Miles Traveled<sup>e</sup></b>
3	42

<b>Fugitive Dust Material Handling</b>				
<b>Aerodynamic Particle Size Multiplier<sup>f</sup></b>	<b>Mean Wind Speed<sup>g</sup></b>	<b>Moisture Content<sup>h</sup></b>	<b>Dirt Handled<sup>i</sup></b>	<b>Dirt Handled<sup>j</sup></b>
	mph		cy	lb/day
0.35	10	7.9	546	1,365,125



**Table B-2 (Continued)**  
**Fill Emissions**

<b>Construction Vehicle (Mobile Source) Emission Factors<sup>k</sup></b>									
	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>VOC</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>NO2</b>
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Automobile	4.12E-03	3.41E-04	1.04E-04	4.41E-05	4.50E-04	8.22E-06	0.73	2.01E-05	4.83E-06
Heavy-Duty Truck	3.98E-03	1.81E-02	5.40E-04	3.85E-04	7.84E-04	3.64E-05	3.76	3.64E-05	2.56E-04

<b>Number of Trips and Trip Length</b>		
<b>Vehicle</b>	<b>No. of One-Way Trips/Day</b>	<b>One-Way Trip Length (miles)</b>
Automobile	7	20
Heavy-duty Truck <sup>l</sup>	19	40

<b>Incremental Increase in Combustion Emissions from Construction Equipment</b>									
<b>Equation:</b> Emission Factor (lb/hr) x No. of Equipment x Work Day (hr/day) = Construction Emissions (lb/day)									
<b>Equipment Type</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>VOC</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>NO2</b>
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Rubber Tired Dozers	15.41	33.34	1.38	1.27	3.98	0.03	3,329	0.36	1.39
Tractors/Loaders/Backhoes	5.24	6.97	0.48	0.44	1.02	0.01	934	0.09	0.29
<b>Total</b>	<b>20.7</b>	<b>40.3</b>	<b>1.9</b>	<b>1.7</b>	<b>5.0</b>	<b>0.0</b>	<b>4,264</b>	<b>0.4</b>	<b>1.7</b>

**Table B-2 (Continued)**  
**Fill Emissions**

**Incremental Increase in Fugitive Dust Emissions from Construction Operations**

**Equations:**

Grading<sup>m</sup>: PM10 Emissions (lb/day) = 0.60 x 0.051 x mean vehicle speed<sup>2.0</sup> x VMTx (1 - control efficiency)

Material Handling<sup>n</sup> PM10 Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier x (wind speed (mph)/5)<sup>1.3</sup>/(moisture content/2)<sup>1.4</sup> x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	Control Efficiency	Unmitigated	Unmitigated
		PM10 <sup>o</sup>	PM2.5 <sup>o</sup>
	%	lb/day	lb/day
Earthmoving	61	4.5	0.947
Material Handling	61	0.11	0.023
<b>Total</b>		<b>4.6</b>	<b>0.970</b>

**Incremental Increase in Combustion Emissions from Onroad Mobile Vehicles**

**Equation:** Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO	NOx	PM10	PM2.5	VOC	SOx	CO2	CH4	NO2
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Haul Truck	1.1150	5.0699	0.1513	0.1077	0.2196	0.0102	1,051	0.0102	0.0718
Water Truck	6.0528	27.5221	0.8213	0.5846	1.1919	0.0553	5,708	0.0554	0.3897
	<b>7.168</b>	<b>32.592</b>	<b>0.973</b>	<b>0.692</b>	<b>1.411</b>	<b>0.065</b>	<b>6,760</b>	<b>0.066</b>	<b>0.462</b>

**Total Incremental Localized Emissions from Construction Activities**

Sources	CO	NOx	PM10	PM2.5	VOC	SOx	CO2
Emissions	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	metric ton/year
	<b>28</b>	<b>73</b>	<b>7.5</b>	<b>3.4</b>	<b>6.4</b>	<b>0.111</b>	<b>265</b>
<b>Significance Threshold<sup>p</sup></b>	<b>550</b>	<b>100</b>	<b>150</b>	<b>55</b>	<b>75</b>	<b>150</b>	
<b>Exceed Significance?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	

**Table B-2 (Concluded)**  
**Fill Emissions**

**Notes:**

- a) Based on assumption that each bulldozer can move 35 cubic yards of soil per hour and one acre of area with a depth of 20 feet.
- b) Estimated construction equipment assumed to operate one eight-hour shift per day.
- c) Emission factors estimated using OFFROAD2011
- d) Caterpillar Performance Handbook, Edition 33, October 2003 Operating Speeds, p 2-3.
- e) Two bulldozers traveling three miles per hour for seven hours per day.
- f) USEPA, AP-42, Jan 1995, Section 13.2.4 Aggregate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for  $< 10 \mu\text{m}$
- g) Mean wind speed - maximum of daily average wind speeds reported in 1981 meteorological data.
- i) Assuming 546.05 cubic yards of dirt handled (4840 ft<sup>2</sup> x 20 ft) x yd<sup>3</sup>/27 ft<sup>3</sup>/ days)
- j) Dirt handled, lb/day = (546.05 yd<sup>3</sup> x 2,500 lb/yd<sup>3</sup>)
- k) Emission factors estimated using EMFAC2011 for the 2014 fleet year.
- l) Assumed 30 cubic yd truck capacity for 546.05 cy of dirt [(546.05 cy x truck/30 cy) = 19 one-way truck trips/day].
- m) USEPA, AP-42, July 1998, Table 11.9-1, Equation for Site Grading  $\leq 10 \mu\text{m}$
- n) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12
- o) Includes watering at least three times a day per Rule 403 (61% control efficiency)
- p) SCAQMD CEQA significance thresholds

**Table B-3  
Paving Emissions**

<b>Asphalt Paving of Foundation</b>			
<b>Construction Schedule</b>	<b>12</b>	<b>days<sup>a</sup></b>	

<b>Equipment Type<sup>a</sup></b>	<b>No. of Equipment</b>	<b>hr/day</b>	<b>Crew Size</b>
Pavers	1	7.0	10
Cement and Mortar Mixers	4	6.0	
Rollers	1	7.0	
Tractors/Loaders/Backhoes	1	7.0	

<b>Construction Equipment Combustion Emission Factors</b>									
	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>VOC</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>NO2</b>
<b>Equipment Type<sup>b</sup></b>	lb/hr	lb/hr	lb/hr		lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Pavers	0.526	0.810	0.056	0.052	0.143	0.001	78	0.013	0.000
Cement and Mortar Mixers	0.042	0.055	0.002	0.002	0.009	0.000	7	0.001	0.000
Rollers	0.401	0.616	0.042	0.039	0.091	0.001	67	0.008	0.000
Tractors/Loaders/Backhoes	0.374	0.498	0.034	0.031	0.073	0.001	67	0.007	0.000

<b>Construction Vehicle (Mobile Source) Emission Factors<sup>c</sup></b>									
	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>VOC</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>NO2</b>
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Automobile	4.12E-03	3.41E-04	1.04E-04	4.41E-05	4.50E-04	8.22E-06	0.73	2.01E-05	4.83E-06
Heavy-Duty Truck	3.98E-03	1.81E-02	5.40E-04	3.85E-04	7.84E-04	3.64E-05	3.76	3.64E-05	2.56E-04

<b>Number of Trips and Trip Length</b>		
<b>Vehicle</b>	<b>No. of One-Way Trips/Day</b>	<b>One-Way Trip Length (miles)</b>
Worker	10	20
Delivery Truck <sup>d</sup>	3	40

**Table B-3 (Continued)**  
**Paving Emissions**

<b>Incremental Increase in Combustion Emissions from Construction Equipment</b>									
<b>Equation:</b> Emission Factor (lb/hr) x No. of Equipment x Work Day (hr/day) = Construction Emissions (lb/day)									
<b>Equipment Type</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>VOC</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>NO2</b>
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Pavers	3.68	5.67	0.39	0.36	0.1	0.00	51	0.01	0.00
Cement and Mortar Mixers	9.63	14.78	1.01	0.93	0.6	0.01	469	0.06	0.00
Rollers	0.29	0.39	0.02	0.02	0.0	0.00	0	0.00	0.00
Tractors/Loaders/Backhoes	2.62	3.48	0.24	0.22	0.0	0.00	0	0.00	0.00
<b>Total</b>	<b>16</b>	<b>24</b>	<b>1.66</b>	<b>1.52</b>	<b>0.70</b>	<b>0.01</b>	<b>520</b>	<b>0.06</b>	<b>0.00</b>

<b>Incremental Increase in Combustion Emissions from Onroad Mobile Vehicles</b>									
<b>Equation:</b> Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)									
<b>Vehicle</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>VOC</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>NO2</b>
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Worker	1.649	0.137	0.0415	0.0177	0.1801	0.0033	291.3421	0.0080	0.0019
Delivery	0.956	4.346	0.1297	0.0923	0.1882	0.0087	901.2773	0.0087	0.0615
<b>Total</b>	<b>2.604</b>	<b>4.482</b>	<b>0.1712</b>	<b>0.1100</b>	<b>0.3683</b>	<b>0.0120</b>	<b>1192.619</b>	<b>0.0168</b>	<b>0.0635</b>

<b>Total Incremental Combustion Emissions from Construction Activities</b>							
<b>Sources</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>VOC</b>	<b>SOx</b>	<b>CO2eq</b>
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	metric ton/year
Emissions	<b>19</b>	<b>29</b>	<b>1.8</b>	<b>1.6</b>	<b>1.1</b>	<b>0.0</b>	<b>9.4</b>
<b>Significance Threshold<sup>c</sup></b>	<b>550</b>	<b>100</b>	<b>150</b>	<b>55</b>	<b>75</b>	<b>150</b>	
<b>Exceed Significance?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	

**Table B-3 (Concluded)  
Paving Emissions**

**Notes:**

- a) Estimated construction equipment assumed to operate one eight-hour shift per day.
- b) Emission factors estimated using OFFROAD2011
- c) Emission factors estimated using EMFAC2011 for the 2014 fleet year.
- d) Assumed three deliver truck trips per day.
- e) SCAQMD CEQA significance thresholds

**Table B-4  
Structure Building Emissions**

<b>Construction of APC</b>									
<b>Construction Schedule</b>		21 days							
<b>Equipment Type<sup>a</sup></b>	<b>No. of Equipment</b>	<b>hr/day</b>	<b>Crew Size</b>						
Cranes	3	4.0	10						
Forklifts	2	6.0							
Tractors/Loaders/Backhoes	2	8.0							
<b>Construction Equipment Combustion Emission Factors</b>									
	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>VOC</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>NO2</b>
<b>Equipment Type<sup>b</sup></b>	lb/hr	lb/hr	lb/hr		lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Cranes	0.431	1.028	0.044	0.041	0.120	0.001	121	0.011	0.043
Forklifts	0.221	0.355	0.018	0.016	0.050	0.001	54	0.004	0.015
Tractors/Loaders/Backhoes	0.374	0.498	0.034	0.031	0.073	0.001	67	0.007	0.021
<b>Construction Vehicle (Mobile Source) Emission Factors<sup>c</sup></b>									
	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>VOC</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>NO2</b>
<b>Vehicle</b>	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Automobile	4.12E-03	3.41E-04	1.04E-04	4.41E-05	4.50E-04	8.22E-06	0.73	2.01E-05	4.83E-06
Heavy-Duty Truck	3.98E-03	1.81E-02	5.40E-04	3.85E-04	7.84E-04	3.64E-05	3.76	3.64E-05	2.56E-04
<b>Number of Trips and Trip Length</b>									
<b>Vehicle</b>	<b>No. of One-Way Trips/Day</b>	<b>One-Way Trip Length (miles)</b>							
Worker	10	20							
Heavy-duty Truckd	3	40							

**Table B-4 (Continued)**  
**Structure Building Emissions**

<b>Incremental Increase in Combustion Emissions from Construction Equipment</b>									
<b>Equation:</b> Emission Factor (lb/hr) x No. of Equipment x Work Day (hr/day) = Construction Emissions (lb/day)									
<b>Equipment Type</b>	<b>CO</b> lb/day	<b>NOx</b> lb/day	<b>PM10</b> lb/day	<b>PM2.5</b> lb/day	<b>VOC</b> lb/day	<b>SOx</b> lb/day	<b>CO2</b> lb/day	<b>CH4</b> lb/day	<b>NO2</b> lb/day
Cranes	5.2	12.3	0.53	0.49	1.4	0.02	1,451	0.13	0.51
Forklifts	2.7	4.3	0.21	0.20	0.60	0.01	652	0.05	0.18
Tractors/Loaders/Backhoes	6.0	8.0	0.54	0.50	1.17	0.01	1,068	0.10	0.33
<b>Total</b>	<b>13.8</b>	<b>24.6</b>	<b>1.3</b>	<b>1.2</b>	<b>3.2</b>	<b>0.04</b>	<b>3,171</b>	<b>0.29</b>	<b>1.02</b>

<b>Incremental Increase in Combustion Emissions from Onroad Mobile Vehicles</b>									
<b>Equation:</b> Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)									
<b>Vehicle</b>	<b>CO</b> lb/day	<b>NOx</b> lb/day	<b>PM10</b> lb/day	<b>PM2.5</b> lb/day	<b>VOC</b> lb/day	<b>SOx</b> lb/day	<b>CO2</b> lb/day	<b>CH4</b> lb/day	<b>NO2</b> lb/day
Flatbed Trucks	1.59	7.2	0.216	0.154	0.314	1.45E-02	1,502	0.0146	0.1026
Water Trucks	0.96	4.3	0.13	0.092	0.19	9.00E-03	901	0.009	0.062
<b>Total</b>	<b>2.5</b>	<b>11.6</b>	<b>0.35</b>	<b>0.25</b>	<b>0.50</b>	<b>2.35E-02</b>	<b>2,403</b>	<b>0.024</b>	<b>0.165</b>

<b>Total Incremental Combustion Emissions from Construction Activities</b>							
<b>Sources</b>	<b>CO</b> lb/day	<b>NOx</b> lb/day	<b>PM10</b> lb/day	<b>PM2.5</b> lb/day	<b>VOC</b> lb/day	<b>SOx</b> lb/day	<b>CO2eq</b> metric ton/year
Emissions	<b>16</b>	<b>36</b>	<b>1.6</b>	<b>1.4</b>	<b>3.7</b>	<b>0.1</b>	<b>540</b>
<b>Significance Threshold<sup>e</sup></b>	<b>550</b>	<b>100</b>	<b>150</b>	<b>55</b>	<b>75</b>	<b>150</b>	
<b>Exceed Significance?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	



**Table B-4 (Concluded)  
Structure Building Emissions**

**Notes:**

- a) Estimated construction equipment assumed to operate one eight-hour shift per day.
- b) Emission factors estimated using OFFROAD2011
- c) Emission factors estimated using EMFAC2011 for the 2014 fleet year.
- d) Assumed three deliver truck trips per day.
- e) SCAQMD CEQA significance thresholds

**Table B-5  
Operational Emission SCAQMD**

<b>Operational</b>									
	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>VOC</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>NO2</b>
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Automobile	4.12E-03	3.41E-04	1.04E-04	4.41E-05	4.50E-04	8.22E-06	0.73	2.01E-05	4.83E-06
Heavy-Duty Truck <sup>a</sup>	3.98E-03	1.81E-02	5.40E-04	3.85E-04	7.84E-04	3.64E-05	3.76	3.64E-05	2.56E-04

<b>Number of Trips and Trip Length</b>		
<b>Vehicle</b>	<b>No. of One-Way Trips/Day<sup>i</sup></b>	<b>One-Way Trip Length<sup>j</sup> (miles)</b>
Worker	32	20
Heavy-duty Truck (Sweeper)	3	21

<b>Incremental Increase in Combustion Emissions from Onroad Mobile Vehicles</b>									
<b>Equation:</b> Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)									
<b>Vehicle</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>VOC</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>NO2</b>
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Automobile	5.28	0.437	0.1328	0.0565	0.576	0.01052	932	0.0257	4.83E-06
Heavy-duty Truck (Sweeper)	0.5	2.3	0.068	0.048	0.10	0.0046	473	0.0046	0.032
<b>Total Incremental Localized Emissions from Operational Activities</b>									
<b>Sources</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>VOC</b>	<b>SOx</b>	<b>CO2</b>		
Emissions	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	metric ton/year		
	<b>5.8</b>	<b>2.7</b>	<b>0.2</b>	<b>0.1</b>	<b>0.7</b>	<b>0.02</b>	<b>0.64</b>		
<b>Significance Threshold<sup>b</sup></b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>55</b>	<b>75</b>	<b>150</b>	<b>10,000</b>		
<b>Exceed Significance?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>		

**Notes:**

- h) Emission factors estimated using EMFAC2011 for the 2014 fleet year.
- n) SCAQMD significance thresholds

**Table B-6  
Vehicle Hauling Operational Emissions**

<b>CO, g/hr-veh</b>	<b>NOX, g/hr-veh</b>	<b>PM10, g/hr-veh</b>	<b>PM2.5, g/hr-veh</b>	<b>ROG, g/hr-veh</b>	<b>SOx, g/hr-veh</b>
67.41757	73.66038971	7.16075	6.58789	38.69741	1.9709892

ARB, 2013, [http://www.arb.ca.gov/msei/emfac2011\\_idling\\_emission\\_rates.xlsx](http://www.arb.ca.gov/msei/emfac2011_idling_emission_rates.xlsx).

<b>Idling Time, min/trip</b>	<b>CO, lb/day</b>	<b>NOx, lb/day</b>	<b>PM, lb/day</b>	<b>ROG, lb/day</b>	<b>SOx, lb/day</b>
15	0.037	0.0401	0.0039	0.00361	0.0211

**Table B-7  
Construction Equipment Fuel Use**

**Demolition**

<b>Equipment Type</b>	<b>No. of Equipment</b>	<b>Op Time, hr/day</b>	<b>Fuel Economy, gal/hr</b>	<b>Fuel Used, gal/day</b>
Concrete/Industrial Saws	1	7.0		
Excavators	2	7.0	3.2	44.8
Tractors/Loaders/Backhoes	2	7.0	1.9	26.6
Rubber Tired Dozers	1	4.0	5.2	20.8
				<b>92.2</b>

**Fill**

<b>Equipment Type</b>	<b>No. of Equipment</b>	<b>Op Time, hr/day</b>	<b>Fuel Economy, gal/hr</b>	<b>Fuel Used, gal/day</b>
Rubber Tired Dozers	2	7.0	5.2	72.8
Tractors/Loaders/Backhoes	2	7.0	1.9	26.6
				<b>99.4</b>

**Paving**

<b>Equipment Type</b>	<b>No. of Equipment</b>	<b>Op Time, hr/day</b>	<b>Fuel Economy, gal/hr</b>	<b>Fuel Used, gal/day</b>
Cranes	3	4.0	3.52	42.24
Forklifts	2	6.0	0.96	11.52
Tractors/Loaders/Backhoes	2	8.0	1.9	30.4
				<b>84.16</b>

**Structure Construction**

<b>Equipment Type</b>	<b>No. of Equipment</b>	<b>Op Time, hr/day</b>	<b>Fuel Economy, gal/hr</b>	<b>Fuel Used, gal/day</b>
Pavers	1	7.0	2.8	19.6
Cement and Mortar Mixers	4	6.0		
Rollers	1	7.0	1.6	11.2
Tractors/Loaders/Backhoes	1	7.0	1.9	13.3
				<b>44.1</b>

**Table B-8  
Vehicle Fuel Use**

**Demolition**

<b>Vehicle</b>	<b>No. of One-Way, Trips/Day</b>	<b>One-Way Trip Length, miles</b>	<b>Fuel Economy, mpg</b>	<b>Fuel Used, gal/day</b>
Automobile	9	20	10	36
Heavy-duty Truck	17	70	40	60

**Fill**

<b>Vehicle</b>	<b>No. of One-Way, Trips/Day</b>	<b>One-Way Trip Length, miles</b>	<b>Fuel Economy, mpg</b>	<b>Fuel Used, gal/day</b>
Automobile	1	20	10	4
Heavy-duty Truck	19	40	40	38

**Paving**

<b>Vehicle</b>	<b>No. of One-Way, Trips/Day</b>	<b>One-Way Trip Length, miles</b>	<b>Fuel Economy, mpg</b>	<b>Fuel Used, gal/day</b>
Automobile	3	20	10	12
Heavy-duty Truck	3	40	40	6

**Structure Building**

<b>Vehicle</b>	<b>No. of One-Way, Trips/Day</b>	<b>One-Way Trip Length, miles</b>	<b>Fuel Economy, mpg</b>	<b>Fuel Used, gal/day</b>
Automobile	3	20	10	12
Heavy-duty Truck	3	40	40	6

**Operational**

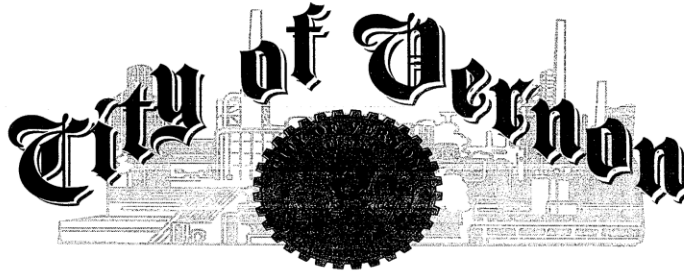
<b>Vehicle</b>	<b>No. of One-Way, Trips/Day</b>	<b>One-Way Trip Length, miles</b>	<b>Fuel Economy, mpg</b>	<b>Fuel Used, gal/day</b>
Automobile	32	20	10	128
Heavy-duty Truck (Sweeper)	3	21	40	3

**APPENDIX C**

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**COMMENT LETTER AND RESPONSE TO COMMENTS**

Comment Letter # 1  
City of Vernon, Dated February 11, 2015



**PUBLIC WORKS, WATER & DEVELOPMENT SERVICES**

4305 Santa Fe Avenue, Vernon, California 90058  
Telephone (323) 583-8811 Fax (323) 826-1435

February 11, 2015

Cynthia Carter (c/o CEQA)  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765-4182

Re: Draft Subsequent Environmental Assessment proposed Rule 1420.1

Dear Ms. Carter:

The City of Vernon has reviewed the Notice of Completion of a Draft Subsequent Environmental Assessment for the project titled Proposed Amended Rule 1420.1 – Emissions Standard for lead and other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities. The City of Vernon appreciates the ability to review and provide comments on the document. Below are the concerns we have found with the document:

- In Section VI - Energy, the SCAQMD has provided a discussion of parts b), c) & d). This discussion specifically describes the number of gigawatts consumed in the Los Angeles Department of Water and Power (LADWP) service area and makes a determination that the power consumed by Exide by the WESP system would not result in a significant adverse electricity energy impact of the LADWP system. However, the Exide plant's electrical service is not served by LADWP. The plant is served by the City of Vernon Gas and Electric Department. While the City of Vernon does not foresee an impact to its electrical system from the WESP operation, the analysis should be conducted based on the electrical service being provided by the City of Vernon.
- In Sections VII - Geology and Soils, and VIII - Hazardous Materials, reference is made to the Uniform Codes, which have not been published in over a decade. Title 24 of the California Code of Regulations sets forth the construction codes that are established by the State of California. Health and Safety Code Section 17958 allows local agencies to further amend these codes. Therefore, it is recommended that the reference to the Uniform Codes in these sections be replaced with the terminology: the California Building Code as amended by the City of Vernon, and the California Fire Code as amended by the City of Vernon.

1-1

1-2



- In Section XII - Noise, the SCAQMD made reference to the City of Vernon Noise Requirements in Table 2-17. The Table states "Requires that noise levels generated by construction equipment within a residential zone not exceed 75dBA. The City's noise standards are contained in Section 26.4.1-6(b)(2) of the City's Comprehensive Zoning Ordinance. The City does not have specific noise standards for construction. The City has noise standards for those properties within one-tenth of a mile of any residence or school and for all other lots. The Exide facility is not located within one-tenth of a mile of any school or residence. Therefore Table 2-17 erroneously states that the facility is within a residential zone. This statement should be corrected.

1-3

If you have any questions please feel free to contact me.

Sincerely,



Samuel Kevin Wilson, P.E.  
Director of Public Works, Water and Development Services

SKW

**Response to Comment Letter # 1**  
**City of Vernon, Dated February 11, 2015**

**Response to Comment 1-1**

The commenter summarizes their concerns with Exide's energy service provider in the Draft SEA. The Draft SEA states that Exide is serviced by the Los Angeles Department of Water and Power (LADWP). However, the commenter states that Exide's plant is serviced by the City of Vernon Gas and Electric Department. The SCAQMD acknowledges the oversight. Nevertheless, as noted in the letter by the commentator, the operation of the WESP from power supplied by the City of Vernon would not generate an adverse impact to the electrical systems as shown the table below. The table compares electrical needs as presented in the Draft SEA to the City of Vernon's consumption. Therefore, whether the electrical supplier is LADWP or the City of Vernon, the electrical impact will be less than significant. So, the conclusion of the Draft SEA's of no significant impact to the electric demands does not change. Therefore, there is no need for the analysis to be recirculated.

Area	Proposed Electricity Use		Area Consumption, MW-h/yr	Proposed Percentage of Area Consumption
	kW-h	MW-h/yr		
City of Vernon <sup>22</sup>	8,643	75,713	1,131,494	0.00076

**Response to Comment 1-2**

The commenter made reference to Section VII -- Geology and Soils, and Section VIII -- Hazardous Materials, requesting to replace the reference to Uniform Codes with "California Building Code as amended by the City of Vernon, and the California Fire Code as amended by the City of Vernon". However, the Geology and Soils reference is taken directly from *Appendix G: Environmental Checklist Form, question d)* of the CEQA Guidelines. SCAQMD has no authority to amend the CEQA Guidelines, which is the responsibility of the California Resources Agency. There is an understanding that the Uniform Codes refers to the California Fire Code as amended by the City of Vernon.

The analysis in Section VIII -- Hazardous Materials refers to the "Uniform Fire Codes and the Uniform Building Code" with the understanding that they refer to the California Uniform Codes as applicable in the region where the project is located. The company is required to comply with the California Uniform Codes regardless of the nomenclature. Thus, there is no change in the conclusion of the Draft SEA and no need for recirculation.

**Response to Comment 1-3**

The commenter states that the City of Vernon does not have specific noise standards for construction, but does have noise standards for facilities within 1/10 of mile of a school. Since Exide is not within 1/10 of a mile of a school, the City's 60-65 dBA noise standard does not apply. According to the City of Vernon's Zoning Ordinance<sup>23</sup>, the City of Vernon has a separate noise standard for "all other lots at anytime at 75 d BA", which would apply to this project. It is not clear in what application (i.e. construction or operation) the City of Vernon's noise standards should be applied, so for this analysis, the more conservative approach was to apply them during both construction and operation. Thus, the SCAQMD applied this 75 dBA standard to construction noise to determine significance. Thus, there is no change to the conclusion in the document and no need for recirculation.

<sup>22</sup> City of Vernon, FY13-14; [www.cmua.org](http://www.cmua.org) (California Municipal Utilities Association)

<sup>23</sup> City of Vernon Zoning Ordinance, [http://www.cityofvernon.org/good\\_governance\\_reforms/ZoningOrdinanceDiscussionPowerPoint\\_BDC.pdf](http://www.cityofvernon.org/good_governance_reforms/ZoningOrdinanceDiscussionPowerPoint_BDC.pdf); Accessed February 19, 2015

BOARD MEETING DATE: March 6, 2015

AGENDA NO. 29

REPORT: Annual RECLAIM Audit Report for 2013 Compliance Year

SYNOPSIS: The annual report on the NO<sub>x</sub> and SO<sub>x</sub> RECLAIM program is prepared in accordance with Rule 2015 - Backstop Provisions. The report assesses emission reductions, availability of RECLAIM Trading Credits (RTCs) and their average annual prices, job impacts, compliance issues, and other measures of performance for the twentieth year of this program. In addition, recent trends in trading future year RTCs are analyzed and presented in this report. Further, a list of facilities that did not reconcile their emissions for the 2013 Compliance Year is included with the report.

COMMITTEE: Stationary Source, February 20, 2015, Reviewed

RECOMMENDED ACTION:  
Approve the attached annual report.

Barry R. Wallerstein, D.Env.  
Executive Officer

MN:JW:DL

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### **Background**

The Board adopted the RECLAIM program on October 15, 1993 to provide a more flexible compliance program than command-and-control for specific facilities, which represent SCAQMD's largest emitters of NO<sub>x</sub> and SO<sub>x</sub>. Although RECLAIM was developed as an alternative to command-and-control, it was designed to meet all state and federal Clean Air Act and other air quality regulations and program requirements, as well as a variety of performance criteria in order to ensure public health protection, air quality improvement, effective enforcement, and the same or lower implementation costs and job impacts. RECLAIM is what is commonly referred to as a "cap and trade" program. Facilities subject to the program were initially allocated declining annual balances of RECLAIM Trading Credits (RTCs, denominated in pounds of emissions in a specified year) based upon their historical production levels and upon emissions factors established in the RECLAIM regulation. RECLAIM facilities are required to reconcile their emissions with their RTC holdings on a quarterly basis (*i.e.*, hold RTCs equal to or

greater than their emissions). These facilities have the flexibility to manage how they meet their emission goals by installing emission controls, making process changes or trading RTCs amongst themselves. RECLAIM achieves its overall emission reduction goals provided aggregate RECLAIM emissions are no more than aggregate allocations.

RECLAIM Rule 2015 - Backstop Provisions requires SCAQMD staff to conduct annual program audits to assess various aspects of the program and to verify that program objectives are met. SCAQMD staff has completed audits of facility records and completed the annual audit of the RECLAIM program for Compliance Year 2013 (which extends from January 1, 2013, start of Cycle 1, through June 30, 2014, end of Cycle 2). Based on audited emissions in this report and previous annual reports, SCAQMD staff has determined that RECLAIM met its emissions goals for Compliance Year 2013, as well as for all previous compliance years with the only exception of NO<sub>x</sub> emissions in Compliance Year 2000. For that year, NO<sub>x</sub> emissions exceeded programmatic allocations (by 11%) primarily due to emissions from electric generating facilities during the California energy crisis. For Compliance Year 2013, audited NO<sub>x</sub> emissions were 24% less than programmatic NO<sub>x</sub> allocations and audited SO<sub>x</sub> emissions were 35% less than programmatic SO<sub>x</sub> allocations.

### **Audit Findings**

The audit of the RECLAIM Program's Compliance Year 2013 and trades of RTCs that occurred during calendar year 2014 show:

- **Overall Compliance** – Audited NO<sub>x</sub> and SO<sub>x</sub> emissions from RECLAIM facilities were significantly below programmatic allocations.
- **Universe** – The RECLAIM universe consisted of 273 facilities as of June 30, 2013. Six facilities were included, no facility was excluded, and four facilities in the RECLAIM universe shut down during Compliance Year 2013. Thus, 275 facilities were in the RECLAIM universe on June 30, 2014, the end of the Compliance Year 2013. Of the six newly included facilities, one facility elected to enter the RECLAIM program, whereas another facility, a former RECLAIM facility which ceased operation in 2005, reactivated its operation. The third facility relocated part of its operation to a new location. The remaining three facilities were included in NO<sub>x</sub> RECLAIM pursuant to Rule 2001(b) – Criteria for Inclusion in RECLAIM. Additionally, another facility was added to the SO<sub>x</sub> market, but this inclusion did not affect the number of facilities in the entire RECLAIM universe because it formerly participated in the NO<sub>x</sub> market.

Of the four facilities that shut down, one facility shut down and filed for bankruptcy, whereas another facility had all equipment removed from the site and the property was sold for development as a warehouse-distribution center. Of the remaining two facilities, one attributed a declining demand for products and the other cited the high cost of manufacturing as reasons for shutdown.

- **Facility Compliance** – The vast majority of RECLAIM facilities complied with their allocations during the 2013 compliance year (97% of NO<sub>x</sub> facilities and 94% of SO<sub>x</sub> facilities). Nine facilities (3% of total facilities) exceeded their allocations (one facility exceeded both its NO<sub>x</sub> and SO<sub>x</sub> allocations, seven facilities exceeded their NO<sub>x</sub> allocations, and one facility exceeded its SO<sub>x</sub> allocation) during Compliance Year 2013. The eight facilities that exceeded their NO<sub>x</sub> allocations had total NO<sub>x</sub> emissions of 173.2 tons and did not have adequate allocations to offset 18.5 of those tons. The exceedances represent 10.6% of the sum of the NO<sub>x</sub> emissions from the eight facilities and 0.19% of total RECLAIM NO<sub>x</sub> allocations. Two facilities had SO<sub>x</sub> emissions that exceeded their SO<sub>x</sub> allocations by only nine pounds. Pursuant to Rule 2010(b)(1)(A), all nine facilities had their respective exceedances deducted from their annual allocations for the compliance year subsequent to SCAQMD's determination that the facilities exceeded their Compliance Year 2013 allocations.
- **Job Impacts** – Based on a survey of the RECLAIM facilities, the RECLAIM program had minimal impact on employment during the 2013 compliance year, which is consistent with previous years. RECLAIM facilities reported an overall net gain of 4,180 jobs, representing 4.01% of their total employment. Two facilities reported a gain of one job each due to RECLAIM while one facility reported a loss of four jobs due to RECLAIM. None of the four RECLAIM facilities that shut down during Compliance Year 2013 cited RECLAIM as a contributing factor to the decision to shut down. The job loss and job gain data are compiled strictly from reports submitted by RECLAIM facilities, and SCAQMD staff is not able to verify the accuracy of the reported job impacts data.
- **Trading Activity** – The RTC trading market activity during calendar year 2014 was comparable in terms of number of trades, slightly higher with respect to volume (by 48%), but substantially higher with respect to total value (by 243%) when compared to calendar year 2013. A total of over \$1.15 billion in RTCs has been traded since the adoption of RECLAIM, of which \$104.2 million occurred in calendar year 2014 (compared to \$30.4 million in calendar year 2013), excluding swaps.

The average annual prices of infinite-year block (IYB) and all compliance years discrete-year NO<sub>x</sub> and SO<sub>x</sub> RTCs traded in calendar year 2014 were below the applicable review thresholds for average RTC prices. The average annual prices of RTCs traded during calendar years 2013 and 2014 are summarized and compared to the applicable thresholds in Tables 1 and 2 below:

**Table 1 – Average Prices for Discrete-Year RTCs Traded during Calendar Years 2013 and 2014**

Year Traded	Average Price (\$/ton)				Review Thresholds (\$/ton)	
	2012 NOx RTC	2013 NOx RTC	2014 NOx RTC	2015 NOx RTC	Rule 2015(b)(6)	Health and Safety Code §39616(f)
2013	\$549	\$1,080	\$1,881	\$1,000	\$15,000	\$40,612
2014		\$1,065	\$1,910	\$3,779		
Year Traded	2012 SOx RTC	2013 SOx RTC	2014 SOx RTC	2015 SOx RTC	Rule 2015(b)(6)	Health and Safety Code §39616(f)
2013	\$291	\$485	None traded	\$900	\$15,000	\$29,241
2014		\$378	\$400	None traded		

**Table 2 – Average Prices for IYB RTCs Traded during Calendar Years 2013 and 2014**

RTCs	Average Price (\$/ton)		Review Threshold (\$/ton) [Health and Safety Code §39616(f)]
	Traded in 2013	Traded in 2014	
NOx	\$45,914	\$110,509	\$609,187
SOx	\$181,653	\$80,444	\$438,615

- Role of Investors** – Investors were active in the RTC market. Based on both overall trading values and volume of trades with price, investors’ involvement in 2014 was greater when compared to calendar year 2013. Investors were involved in 134 of the 213 discrete NOx trades with price and 4 of the 6 discrete SOx trades with price. With respect to IYB trades, investors’ participation was significant and they were involved with 44 of 49 IYB NOx trades with price, but none of the 4 IYB SOx trades with price. Compared to calendar year 2013, investor RTC holdings of total IYB NOx and SOx RTCs decreased slightly from 4.9% to 4.6% for IYB NOx RTCs and remained unchanged at 0.9% for IYB SOx RTCs at the end of calendar year 2014.
- Other Findings** – RECLAIM also met other applicable requirements including meeting the applicable federal offset ratio under New Source Review and having no significant seasonal fluctuation in emissions. Additionally, there is no evidence that RECLAIM resulted in any increase in health impacts due to emissions of air toxics. RECLAIM facilities and non-RECLAIM facilities are subject to the same requirements for controlling air toxic emissions.

**Attachment**

Annual RECLAIM Audit Report for 2013 Compliance Year

# SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

## Annual RECLAIM Audit Report for 2013 Compliance Year

**March 6, 2015**

**Executive Officer**

Barry R. Wallerstein, D.Env.

**Deputy Executive Officer**

**Engineering & Compliance**

Mohsen Nazemi, P.E.

**Assistant Deputy Executive Officer**

**Engineering & Compliance**

Jill Whynot

**Senior Enforcement Manager**

**RECLAIM Administration**

Danny Luong, P.E.

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### **EXECUTIVE OFFICER**

Barry R. Wallerstein, D.Env.

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## LIST OF ABBREVIATIONS

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ACEMS	Alternative Continuous Emissions Monitoring System(s)
AER	Annual Emission Report
APEP	Annual Permit Emissions Program
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
CEMS	Continuous Emissions Monitoring System(s)
CEQA	California Environmental Quality Act
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 Standards
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
SCAQMD	South Coast Air Quality Management District
SIP	State Implementation Plan
SOx	Oxides of Sulfur
SSC	Stationary Source Committee
STC	Short Term Credit
SWG	Standing Working Group
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
WATERS	Web Access To Electronic Reporting System

## EXECUTIVE SUMMARY

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### 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 2013 (January 1 through December 31, 2013 for Cycle 1 and July 1, 2013 through June 30, 2014 for Cycle 2 facilities). This annual audit report covers activities for the twentieth 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, 2013, the overall changes in RECLAIM participants were 123 facilities included into the program, 70 facilities excluded from the program, and 174 facilities ceased operation. Thus, the RECLAIM universe consisted of 273 active facilities at the end of Compliance Year 2012 (December 31, 2012 for Cycle 1 facilities and June 30, 2013 for Cycle 2 facilities). During Compliance Year 2013 (January 1, 2013 through December 31, 2013 for Cycle 1 facilities and July 1, 2013 through June 30, 2014 for Cycle 2 facilities), six facilities were included into the RECLAIM universe, no facility was excluded, and four facilities (all in the NO<sub>x</sub> universe only) shut down and are no longer in the active RECLAIM universe. These changes resulted in a net increase of two facilities in the universe, bringing the total number of active RECLAIM facilities to 275 as of the end of Compliance Year 2013.

### Chapter 2: RTC Allocations and Trading

On November 5, 2010, the Governing Board adopted amendments to SO<sub>x</sub> RECLAIM to phase in SO<sub>x</sub> reductions in Compliance Year 2013 and continue through Compliance Year 2019. The amendment will result in an overall reduction of 48.4% (or 5.7 tons/day) in SO<sub>x</sub> allocations when fully implemented (for Compliance Year 2019 and beyond). For Compliance Year 2013, the first

year of implementation, the SOx allocation supply is reduced by 25% (or 3.0 tons/day) to 3,204 tons. There was no programmatic allocation reduction in NOx RTCs during Compliance Year 2013.

The overall NOx RTC supply increased by 20.7 tons and the SOx RTC supply decreased by 5.75 tons during Compliance Year 2013. The changes were due to allocation adjustments for clean fuel production pursuant to Rule 2002(c)(12), which accounted for an increase of 9.9 tons of NOx RTCs and a decrease of 5.8 tons of SOx RTCs. The remaining 10.8 tons of increased NOx RTCs was the result of allocations issued to two facilities that entered the NOx RECLAIM program. One existing NOx RECLAIM facility entered the SOx RECLAIM program and was issued 0.05 tons of SOx RTCs. As a result, the NOx and SOx RTC supplies for Compliance Year 2013 were 9,699 tons and 3,198 tons, respectively.

During calendar year 2014, there were 362 registered RTC transactions with a total value of over \$104 million traded, excluding the values reported for swap transactions. Since the inception of the RECLAIM program in 1994, a total value of over \$1.15 billion dollars has been traded in the RTC trading market, excluding swap transactions. RTC trades are reported to SCAQMD as either 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). In terms of volume traded in calendar year 2014, a total of 2,318 tons of discrete NOx RTCs, 493 tons of discrete SOx RTCs, 942 tons of infinite-year block (IYB) NOx RTCs and 22.5 tons of IYB SOx RTCs were traded. The RTC trading market activity during calendar year 2014 compared to calendar year 2013 was about the same in terms of number of trades, significantly lower in total volume (decreased by 48%), but substantially higher in total value (increased by 243%).

The annual average prices of discrete-year NOx RTCs traded during calendar year 2014 were \$1,065 per ton for Compliance Year 2013 RTCs, \$1,910 per ton for Compliance Year 2014 RTCs, and \$3,779 per ton for Compliance Year 2015 RTCs. The annual average prices for discrete-year SOx RTCs traded during the same period were \$378 per ton for Compliance Year 2013 RTCs and \$400 per ton for Compliance Year 2014 RTCs. Therefore, the annual average 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 \$40,612 per ton of NOx and \$29,241 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 annual average price during calendar year 2014 for IYB NOx RTCs was \$110,509 per ton, and the annual average price for IYB SOx RTCs was \$80,444 per ton. Therefore, annual average IYB RTC prices did not exceed the \$609,187 per ton of IYB NOx RTCs or the \$438,615 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 2014. They were involved in 138 of the 219 discrete NOx and SOx trade registrations with price and 44 of 53 IYB NOx and SOx trades with price. Investors were involved in 46% of total value and 47% of total volume for discrete NOx trades, and 55%

of total value and 57% of total volume for discrete SOx trades. In addition, investors were involved in 64% of total value and 59% of total volume for IYB NOx trades with price. Investors were not involved in any IYB SOx trades with price. At the end of calendar year 2014, investors' holdings of IYB NOx RTCs and IYB SOx RTCs were 4.6% and 0.9% of the total RECLAIM RTCs, respectively.

### **Chapter 3: Emission Reductions Achieved**

For Compliance Year 2013, aggregate NOx emissions were below total allocations by 24% and aggregate SOx emissions were below total allocations by 35%. No emissions associated with breakdowns were excluded from reconciliation with facility allocations in Compliance Year 2013. 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 2013. With respect to the Rule 2015 backstop provisions, Compliance Year 2013 aggregate NOx and SOx 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 2013, a total of 70 NOx RECLAIM facilities had NSR NOx emission increases, and 11 SOx RECLAIM facilities had NSR SOx emission increases due to expansion or modification. Consistent with all prior compliance years, there were sufficient NOx and SOx 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 NOx emission increases and a 1-to-1 offset ratio for SOx emission increases on a programmatic basis. In Compliance Year 2013, RECLAIM provided an offset ratio based on the compliance year's total unused allocations and total NSR emission increases of 6-to-1 for NOx, demonstrating federal equivalency. RECLAIM inherently complies with the federally-required 1-to-1 SOx offset ratio for any compliance year, provided aggregate SOx emissions under RECLAIM are lower than or equal to aggregate SOx allocations for that compliance year. As shown in Chapter 3, there was no programmatic SOx exceedance during Compliance Year 2013. In fact, there was a surplus of SOx RTCs. Therefore, RECLAIM more than complied with the federally-required SOx offset ratio and further quantification of the SOx 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). The same BACT guidelines are used to determine applicable BACT to RECLAIM and non-RECLAIM facilities.

## Chapter 5: Compliance

Of the 279 NO<sub>x</sub> RECLAIM facilities audited during Compliance Year 2013, a total of 271 facilities (97%) complied with their NO<sub>x</sub> allocations, and 31 of the 33 SO<sub>x</sub> facilities (94%) complied with their SO<sub>x</sub> allocations. The eight facilities that exceeded their NO<sub>x</sub> allocations had aggregate NO<sub>x</sub> emissions of 173.2 tons and did not have adequate allocations to offset 18.5 tons (or 10.6%) of their combined emissions. This exceedance amount is small compared to the overall allocations for Compliance Year 2013 (0.19% of total NO<sub>x</sub> allocations). Two SO<sub>x</sub> facilities had SO<sub>x</sub> emissions that exceeded their SO<sub>x</sub> allocations by two pounds in one case and seven pounds in the other case. The exceedances from these facilities did not impact the overall RECLAIM emission reduction goals. Pursuant to Rule 2010(b)(1)(A), these 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 2013 allocations. The overall RECLAIM NO<sub>x</sub> and SO<sub>x</sub> emission reduction targets and goals were met for Compliance Year 2013 (*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. Additional benefits to the local economy (*e.g.*, generating jobs for consulting firms, source testing firms and CEMS vendors) attributable to the RECLAIM program, as well as factors outside of RECLAIM (*e.g.*, the prevailing economic climate), impact the job market. However, these factors are not evaluated in this report. Also, job losses and job gains are strictly based on RECLAIM facilities' reported information. SCAQMD staff is not able to independently verify the accuracy of the reported job impact information.

According to the Compliance Year 2013 employment survey data gathered from APEP reports, RECLAIM facilities reported a net gain of 4,180 jobs, representing 4.01% of their total employment. Two facilities reported a gain of one job each due to RECLAIM while one facility reported a loss of four jobs due to RECLAIM. None of the four RECLAIM facilities that shut down during Compliance Year 2013 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 2013 NO<sub>x</sub> emissions decreased 4.8% relative to Compliance Year 2012 and Compliance Year 2013 SO<sub>x</sub> emissions were 19.0% less than the previous year. Quarterly calendar year 2013 NO<sub>x</sub> emissions fluctuated within 18 percent of the mean NO<sub>x</sub> emissions for the year. Quarterly calendar year 2013 SO<sub>x</sub> emissions fluctuated within 16 percent of the year's mean SO<sub>x</sub> emissions. There was no significant shift in seasonal emissions from the winter season to the summer season for either pollutant.

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 2014, 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 and/or Rule 1401.1). In addition, new or modified sources with NO<sub>x</sub> or SO<sub>x</sub> emission increases are required to be equipped with BACT, which minimizes to the extent feasible the increase of NO<sub>x</sub> and SO<sub>x</sub> emissions. RECLAIM and non-RECLAIM facilities that emit toxic air contaminants are required to report those emissions to SCAQMD. Those emissions reports are used to identify candidates for the Toxics Hot Spots program (AB2588). This program requires emission inventories and depending on the type and amount of emissions, facilities may be required to do public notice and/or prepare and implement a plan to reduce emissions. There is no evidence that RECLAIM has caused or allowed higher toxic risk in areas adjacent to RECLAIM facilities.



## INTRODUCTION

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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 (NOx) and oxides of sulfur (SOx) 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 (CAA) 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 2013 Compliance Year Audit.

This report presents the annual program audit and progress report of RECLAIM's twentieth compliance year (January 1 through December 31, 2013 for Cycle 1 and July 1, 2013 through June 30, 2014 for Cycle 2 RECLAIM facilities), also known as Compliance Year 2013. 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;
- Annual average 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, 2013 (covered under the Annual RECLAIM Audit Report for 2012 Compliance Year), then discusses changes to the RECLAIM universe of sources in detail through the end of Compliance Year 2013.
2. **RTC Allocations and Trading**  
This chapter summarizes changes in emissions allocations in the RECLAIM universe, RTC supply and RTC trading activity, annual average 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

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### 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, 2013, the overall changes in RECLAIM participants were 123 facilities included into the program, 70 facilities excluded from the program, and 174 facilities ceased operation. Thus, the RECLAIM universe consisted of 273 active facilities at the end of Compliance Year 2012 (December 31, 2012 for Cycle 1 facilities and June 30, 2013 for Cycle 2 facilities). During Compliance Year 2013 (January 1, 2013 through December 31, 2013 for Cycle 1 facilities and July 1, 2013 through June 30, 2014 for Cycle 2 facilities), six facilities were included into the RECLAIM universe, no facility was excluded, and four facilities (all in the NOx universe only) shut down and are no longer in the active RECLAIM universe. These changes resulted in a net increase of two facilities in the universe, bringing the total number of active RECLAIM facilities to 275 as of the end of Compliance Year 2013.*

### 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, landfill gas 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<sub>x</sub> and/or SO<sub>x</sub> emissions from permitted sources above the four ton per year threshold; or
- It ceases to be categorically excluded and its reported NO<sub>x</sub> and/or SO<sub>x</sub> 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.

Staff has periodically initiated the process of reviewing past Annual Emission Reports (AERs) 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<sub>x</sub> or SO<sub>x</sub> emissions greater than or equal to four tons per year, as reported under the AER program, for potential inclusion into RECLAIM. This part of the process involves screening for emissions only 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.

## Universe Changes

In the early years of the RECLAIM program, facilities initially identified for inclusion were excluded upon determination that they did not meet the criteria for inclusion (e.g., some facilities that had reported emissions from permitted

sources above four tons in a year were determined to have over-reported their emissions and subsequently submitted corrected emissions reports reflecting emissions from permitted sources below four tons per year). Additionally, facilities that were not part of the original universe were subsequently added to the program based on the inclusion criteria mentioned above. The overall changes to the RECLAIM universe from the date of adoption (October 15, 1993) through June 30, 2013 (the last day of Compliance Year 2012 for Cycle 2 facilities) were: the inclusion of 123 facilities (including 34 facilities created by partial change of operator of existing RECLAIM facilities), the exclusion of 70 facilities, and the shutdown of 174 facilities. Thus, the net change in the RECLAIM universe from January 1, 1994 through June 30, 2013 was a decrease of 121 facilities from 394 to 273 facilities. In Compliance Year 2013 (January 1, 2013 through December 31, 2013 for Cycle 1 facilities and July 1, 2013 through June 30, 2014 for Cycle 2 facilities), six facilities were included, no facility was excluded, and four facilities shut down. These changes brought the total number of facilities in the RECLAIM universe to 275 facilities. The Compliance Year 2013 RECLAIM universe includes 242 NO<sub>x</sub>-only, no SO<sub>x</sub>-only, and 33 both NO<sub>x</sub> and SO<sub>x</sub> RECLAIM facilities. The list of active facilities in the RECLAIM universe as of the end of Compliance Year 2013 is provided in Appendix A.

### **Facility Inclusions and Exclusions**

Six facilities were included in the RECLAIM universe in Compliance Year 2013. One of these facilities elected to enter the RECLAIM program, whereas another facility, a former RECLAIM facility that ceased operation in 2005, reactivated its operation. The third facility relocated part of its operation to a new location. The remaining three facilities were included in NO<sub>x</sub> RECLAIM pursuant to Rule 2001(b) – Criteria for Inclusion in RECLAIM because they reported NO<sub>x</sub> emissions from permitted sources in excess of four tons a year. Additionally, an existing NO<sub>x</sub> RECLAIM facility amended its AERs to report SO<sub>x</sub> emissions exceeding four tons and was added into SO<sub>x</sub> RECLAIM. However, the inclusion of this existing NO<sub>x</sub> facility into SO<sub>x</sub> RECLAIM did not result in a change to the overall number of facilities. Appendix B lists these seven facilities and the reasons for their inclusion. No facility was excluded from the RECLAIM universe during Compliance Year 2013.

Since the implementation of the above-described annual review process, a total of 69 facilities were identified based on their AERs as potential candidates for inclusion (two of the 69 facilities were already NO<sub>x</sub> RECLAIM facilities; they were identified for inclusion into SO<sub>x</sub> RECLAIM based on their SO<sub>x</sub> emissions). As stated above, three NO<sub>x</sub> facilities were included as a result of this process. Twenty-six other facilities are still in various stages of the review process. The remaining 40 facilities have been eliminated from the process because they either have corrected their AERs to be less than 4 tons per year or have been identified to be in one of the exempted facility categories. Additional inclusions will be addressed in future RECLAIM annual program audits as facility eligibility is confirmed. Per Rule 2001(c)(2), a facility is subject to RECLAIM provisions on the date a facility permit containing RECLAIM requirements is issued.

**Facilities Permanently Ceasing Operations**

Four RECLAIM facilities permanently ceased operations in Compliance Year 2013. One facility shut down and filed for bankruptcy. A second facility had all equipment removed from the site and the property was sold for development as a warehouse-distribution center. Of the remaining two facilities, one attributed a declining demand for products and the other cited the high cost of manufacturing as reasons for shutdown. None of these facilities cited RECLAIM as a cause for their shutting down. All four facilities permanently ceasing operations were in NOx RECLAIM. Appendix C lists these facilities and provides brief descriptions of the reported reasons for their closures.

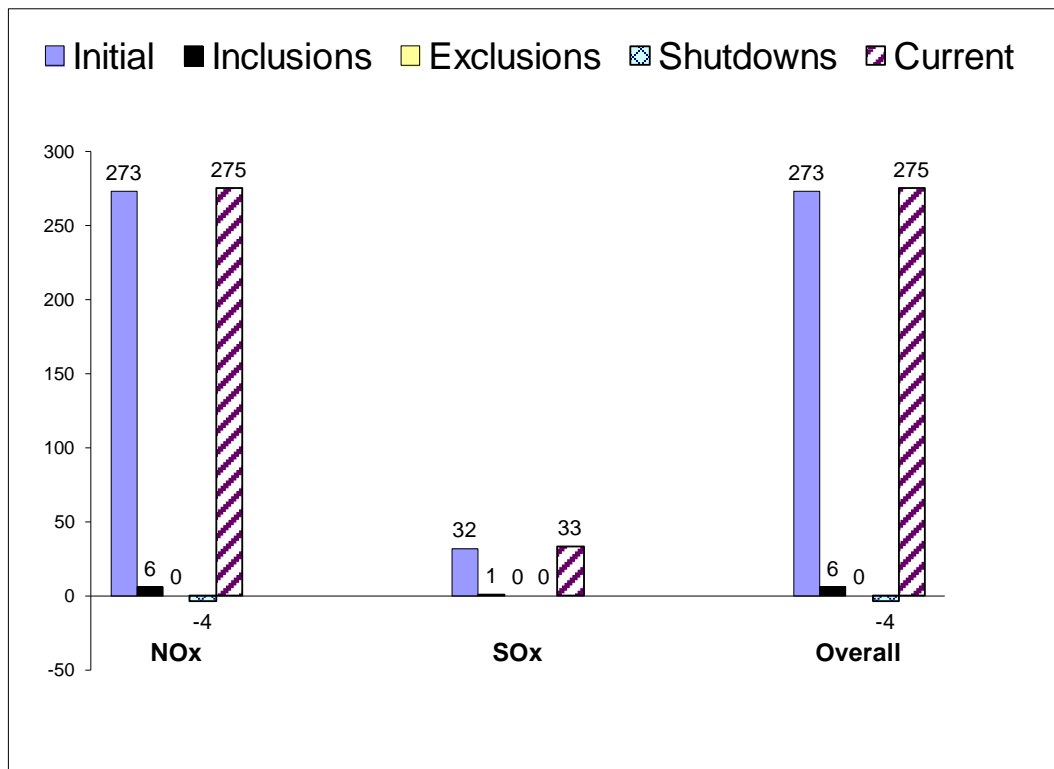
The above mentioned changes to the RECLAIM Universe resulted in a net increase of two facilities in the RECLAIM universe during Compliance Year 2013. Table 1-1 summarizes overall changes in the RECLAIM universe between the start of the program and end of Compliance Year 2013 (December 31, 2013 for Cycle 1 facilities and June 30, 2014 for Cycle 2 facilities). Changes to the RECLAIM universe that occurred in Compliance Year 2013 are illustrated in Figure 1-1.

**Table 1-1  
RECLAIM Universe Changes**

	<b>NOx Facilities</b>	<b>SOx Facilities</b>	<b>Total* Facilities</b>
<b>Universe – October 15, 1993 (Start of Program)</b>	392	41	394
Inclusions – October 15, 1993 through Compliance Year 2012	123	12	123
Exclusions – October 15, 1993 through Compliance Year 2012	-69	-4	-70
Shutdowns – October 15, 1993 through Compliance Year 2012	-173	-17	-174
<b>Universe – June 30, 2013</b>	<b>273</b>	<b>32</b>	<b>273</b>
Inclusions –Compliance Year 2013	6	1	6
Exclusions –Compliance Year 2013	0	0	0
Shutdowns –Compliance Year 2013	-4	0	-4
<b>Universe – End of Compliance Year 2013</b>	<b>275</b>	<b>33</b>	<b>275</b>

\* “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 in Compliance Year 2013**



## CHAPTER 2

### RTC ALLOCATIONS AND TRADING

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#### Summary

*On November 5, 2010, the Governing Board adopted amendments to SOx RECLAIM to phase in SOx reductions in Compliance Year 2013 and continue through Compliance Year 2019. The amendment will result in an overall reduction of 48.4% (or 5.7 tons/day) in SOx allocations when fully implemented (for Compliance Year 2019 and beyond). For Compliance Year 2013, the first year of implementation, the SOx allocation supply is reduced by 25% (or 3.0 tons/day) to 3,204 tons. There was no programmatic allocation reduction in NOx RTCs during Compliance Year 2013.*

*The overall NOx RTC supply increased by 20.7 tons and the SOx RTC supply decreased by 5.75 tons during Compliance Year 2013. The changes were due to allocation adjustments for clean fuel production pursuant to Rule 2002(c)(12), which accounted for an increase of 9.9 tons of NOx RTCs and a decrease of 5.8 tons of SOx RTCs. The remaining 10.8 tons of increased NOx RTCs was the result of allocations issued to two facilities that entered the NOx RECLAIM program. One existing NOx RECLAIM facility entered the SOx RECLAIM program and was issued 0.05 tons of SOx RTCs. As a result, the NOx and SOx RTC supplies for Compliance Year 2013 were 9,699 tons and 3,198 tons, respectively.*

*During calendar year 2014, there were 362 registered RTC transactions with a total value of over \$104 million traded, excluding the values reported for swap transactions. Since the inception of the RECLAIM program in 1994, a total value of over \$1.15 billion dollars has been traded in the RTC trading market, excluding swap transactions. RTC trades are reported to SCAQMD as either 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). In terms of volume traded in calendar year 2014, a total of 2,318 tons of discrete NOx RTCs, 493 tons of discrete SOx RTCs, 942 tons of infinite-year block (IYB) NOx RTCs and 22.5 tons of IYB SOx RTCs were traded. The RTC trading market activity during calendar year 2014 compared to calendar year 2013 was about the same in terms of number of trades, significantly lower in total volume (decreased by 48%), but substantially higher in total value (increased by 243%).*

*The annual average prices of discrete-year NOx RTCs traded during calendar year 2014 were \$1,065 per ton for Compliance Year 2013 RTCs, \$1,910 per ton for Compliance Year 2014 RTCs, and \$3,779 per ton for Compliance Year 2015 RTCs. The annual average prices for discrete-year SOx RTCs traded during the same period were \$378 per ton for Compliance Year 2013 RTCs and \$400 per ton for Compliance Year 2014 RTCs. Therefore, the annual average 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 \$40,612 per ton of NOx and \$29,241 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 annual average price during calendar year 2014 for IYB NOx RTCs was \$110,509 per ton, and the annual average price for IYB SOx RTCs was \$80,444 per ton. Therefore, annual average IYB RTC prices did not exceed the \$609,187 per ton of IYB NOx RTCs or the \$438,615 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 2014. They were involved in 138 of the 219 discrete NOx and SOx trade registrations with price and 44 of 53 IYB NOx and SOx trades with price. Investors were involved in 46% of total value and 47% of total volume for discrete NOx trades, and 55% of total value and 57% of total volume for discrete SOx trades. In addition, investors were involved in 64% of total value and 59% of total volume for IYB NOx trades with price. Investors were not involved in any IYB SOx trades with price. At the end of calendar year 2014, investors' holdings of IYB NOx RTCs and IYB SOx RTCs were 4.6% 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 annual emission reports (if the facility existed prior to January 1, 1993), the listed starting emission factor in Tables 1 or 2 according to the equipment category, any qualified<sup>1</sup> external offsets it previously provided, any unused Emission Reduction Credits (ERCs) generated at and held by the facility and the methodology prescribed in the rule for each Compliance Year subsequent to 1994, including reductions due to implementation of Best Available Retrofit Control Technology (BARCT). 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

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<sup>1</sup> Only external offsets provided at a one-to-one offset ratio after the base year used for allocation quantification purposes.

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 present and discuss Compliance Year 2013 data, RTC trading and price data discussed in this chapter are for calendar year 2014.

## **RTC Allocations and Supply**

The methodology for determining RTC allocations is established by Rule 2002. According to this 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 emission factors used to determine allocations 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 2013 are discussed below.

### **Allocations Adjustments Due to Inclusion and Exclusion of Facilities**

Facilities existing prior to October 1993 and 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 have expired.

Of the six NO<sub>x</sub> facilities and one SO<sub>x</sub> facility that were included in Compliance Year 2013, two NO<sub>x</sub> facilities and the SO<sub>x</sub> facility were issued allocations. A total of 10.8 tons per year of NO<sub>x</sub> allocations and 0.05 tons per year of SO<sub>x</sub> allocations were issued to these facilities entering RECLAIM in Compliance Year 2013.

### **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 California Air Resources Board (CARB) Phase II reformulated gasoline. The amount of these RTCs is based on actual emissions

for the subject compliance year and historical production data. The quantities of such clean fuels RTCs needed were projected based on the historical production data submitted, and qualifying refineries were issued in 2000 an aggregate baseline of 86.5 tons of NO<sub>x</sub> and 42.3 tons of SO<sub>x</sub> for Compliance Year 1999, 101.8 tons of NO<sub>x</sub> and 41.4 tons of SO<sub>x</sub> for Compliance Year 2000, and 98.4 tons of NO<sub>x</sub> and 40.2 tons of SO<sub>x</sub> for each subsequent Compliance Year on the basis of those projections. 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 NO<sub>x</sub> allocations, the NO<sub>x</sub> 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) provides refineries 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 2013, the overall effect of adjusting NO<sub>x</sub> allocations to account for these differences was a total of 9.9 tons of NO<sub>x</sub> RTCs (0.1% of total NO<sub>x</sub> allocation for Compliance Year 2013) added to, and 5.8 tons of SO<sub>x</sub> RTCs (0.2% of total SO<sub>x</sub> allocation for Compliance Year 2013) deducted from, refineries' Compliance Year 2013 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 2013.

#### **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. No new RTCs were issued by conversion of other types of emission reduction credits in Compliance Year 2013.

### Net Changes in RTC Allocations

The changes to RTC supplies described in the above sections resulted in a net increase of 20.7 tons of NO<sub>x</sub> RTCs (0.2% of the total) and a decrease of 5.8 tons of SO<sub>x</sub> RTCs (0.2% of total) for Compliance Year 2013. Table 2-1 summarizes the changes in NO<sub>x</sub> and SO<sub>x</sub> RTC supplies that occurred in Compliance Year 2013 pursuant to Rule 2002.

**Table 2-1**  
**Changes in NO<sub>x</sub> and SO<sub>x</sub> RTC Supplies during Compliance Year 2013 (tons/year)**

Source	NO <sub>x</sub>	SO <sub>x</sub>
Universe changes	10.8	0.05
Clean Fuel/Reformulated Gasoline	9.9	-5.8
Activity corrections	0	0
MSERCs	0	0
<b>Net change</b>	<b>20.7</b>	<b>-5.75</b>

Note: The data in this table represents the changes that occurred over the course of Compliance Year 2013 to the Compliance Year 2013 aggregate NO<sub>x</sub> and SO<sub>x</sub> RTC supplies originally issued pursuant to Rule 2002, not the difference between 2013 aggregate RTC supply and that for any other compliance year.

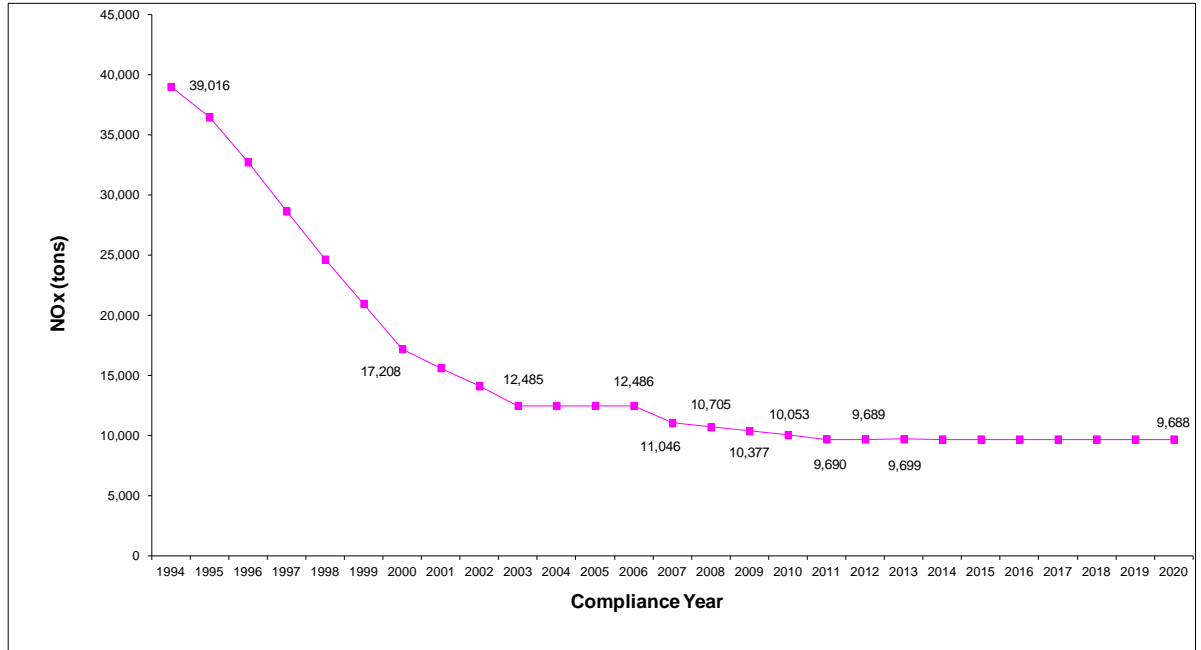
### Allocation Reduction Resulting from BARCT Review

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 NO<sub>x</sub> Reductions for RECLAIM (NO<sub>x</sub>) calling for additional NO<sub>x</sub> reductions from RECLAIM sources. SCAQMD staff then started the rule amendment process, including a detailed analysis of control technologies that qualified as BARCT for NO<sub>x</sub>, 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 NO<sub>x</sub> allocations from all RECLAIM facilities. The reductions were phased in commencing in Compliance Year 2007 and have been fully implemented since Compliance Year 2011.

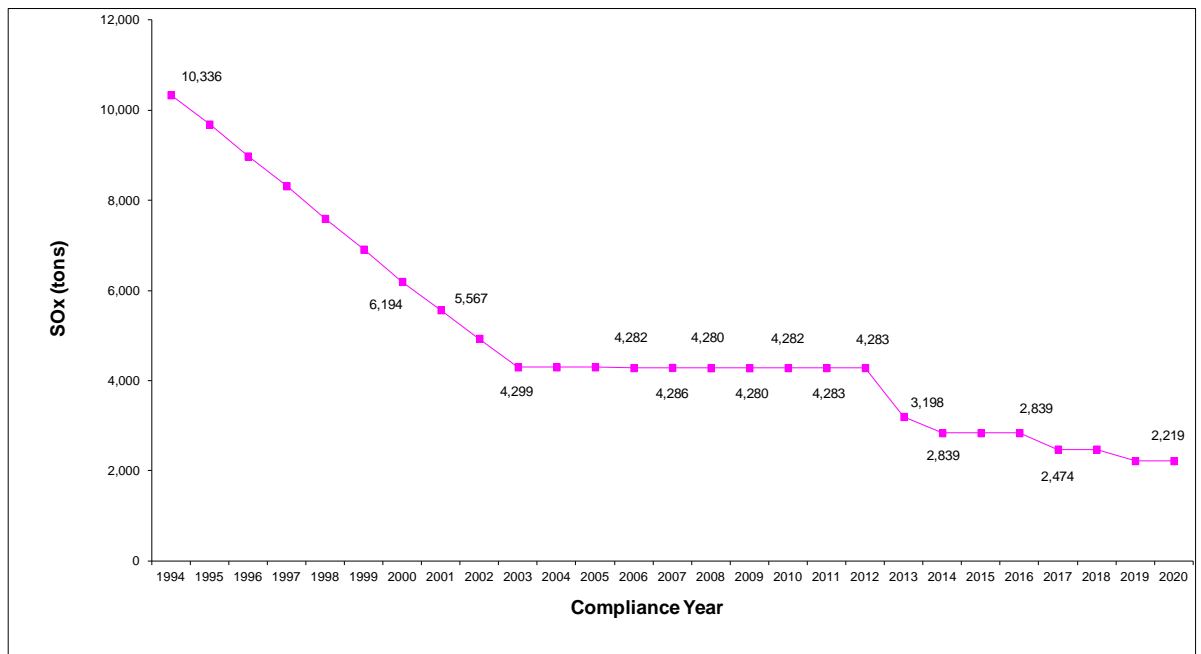
Similarly, on November 5, 2010, the Governing Board adopted changes to the RECLAIM program implementing the 2007 AQMP Control Measure CMB-02 – Further SO<sub>x</sub> Reductions for RECLAIM (SO<sub>x</sub>). Specifically, these amendments will result in an overall reduction of 5.7 tons SO<sub>x</sub> 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 SO<sub>x</sub> is an essential part of the South Coast Air Basin's effort in attaining the federal 24-hour average PM<sub>2.5</sub> 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 NO<sub>x</sub> Reductions for RECLAIM, calling for reductions of NO<sub>x</sub> emissions within the RECLAIM program of 3 to 5 tons per day. The rule development and adoption process for this latest NO<sub>x</sub> reduction is currently ongoing. The actual amount of NO<sub>x</sub> reduction will be determined at the completion of the public process and will be submitted to the Governing Board for its consideration. The public hearing is currently scheduled for the second quarter of calendar year 2015.

### **Upcoming Proposals 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 credits for emission 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 proposed rules are listed on the Rule and Control Measure Forecast as rule activities to be determined for calendar year 2015.

### **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. Swap trades occur when trading partners exchange different types of RTCs. These trades maybe of equal value or different values, in which case some amount of money or credits are also included in swap trades (additional details on swap trades are discussed later in this chapter). 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 annual average 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.

### **RTC Price Thresholds for Program Review**

Rule 2015(b)(6) specifies that, if the annual average price of discrete NO<sub>x</sub> or SO<sub>x</sub> 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. In addition, according to Rule 2002(f)(1)(O), if the annual average price of discrete SOx RTCs for any compliance year from 2017 through 2019 exceeds \$50,000 per ton, the Governing Board has the discretion to convert facilities' Nontradable/Nonusable RTCs to Tradable/Usable RTCs. For RTC transactions occurring in calendar year 2014, the overall program review thresholds in 2014 dollars are \$40,612 per ton of discrete-year NOx RTCs, \$29,241 per ton of discrete-year SOx RTCs, \$609,187 per ton of IYB NOx RTCs, and \$438,615 per ton of IYB SOx RTCs.

## RTC Trading Activity Excluding Swaps

### Overall Trading Activity

RTC trades include discrete and IYB RTCs traded with prices, discrete and IYB RTC transfers with zero price, and discrete and IYB RTC swap trades. The RTC market activity in calendar year 2014 was comparable to the market activity in calendar year 2013 in terms of the number of transactions. The calendar year 2014 trading activity—362 total registered trade transactions (344 NOx trades and 18 SOx trades)—was slightly lower than the number of trade transactions in calendar year 2013 (367 total registered trade transactions).

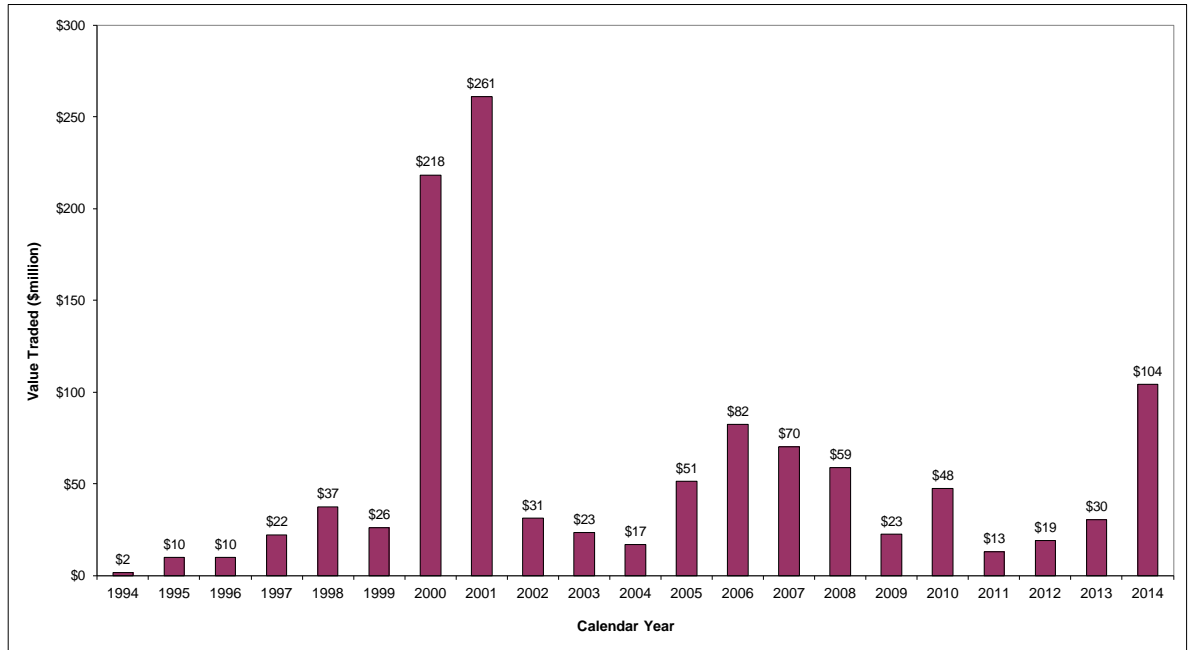
In comparison to calendar year 2013, the value traded in calendar year 2014 was substantially higher (increased by 243%). Excluding swap trades, a total value of almost \$104.2 million was traded in calendar year 2014 (\$102.4 million for NOx and \$1.8 million for SOx)—substantially higher than the total value of \$30.4 million traded in calendar year 2013 (\$15.9 million for NOx and \$14.5 million for SOx). As illustrated in Figure 2-3, 2014 experienced the highest annual value of RTCs traded in RECLAIM to date other than 2000 and 2001, both of which had exceptionally high prices due to the California energy crisis that happened at that time. The increase in the total value traded was due to the much higher price for the IYB NOx RTCs traded in 2014. Figure 2-4 summarizes overall trading activity (excluding swaps) in calendar year 2014 by pollutant.

With respect to volume traded (also excluding swap trades), the 2,811 tons of discrete RTCs traded in calendar year 2014 were substantially lower than the 5,000 tons of discrete RTCs traded in calendar year 2013 (decreased by 48%). In calendar year 2014, there were 1,808 tons of discrete NOx RTCs and 51 tons of discrete SOx traded with price and 510 tons of discrete NOx and 442 tons of discrete SOx traded without price. In addition, the 965 tons of IYB RTCs traded in calendar year 2014 were also much lower than the 2,216 tons of IYB RTCs traded in 2013 (decreased by 56%). There were 902 tons of IYB NOx and 23 tons of IYB SOx traded with price and 40 tons of IYB NOx traded with zero price. There were no 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 64 trades with zero price in calendar year 2014. 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

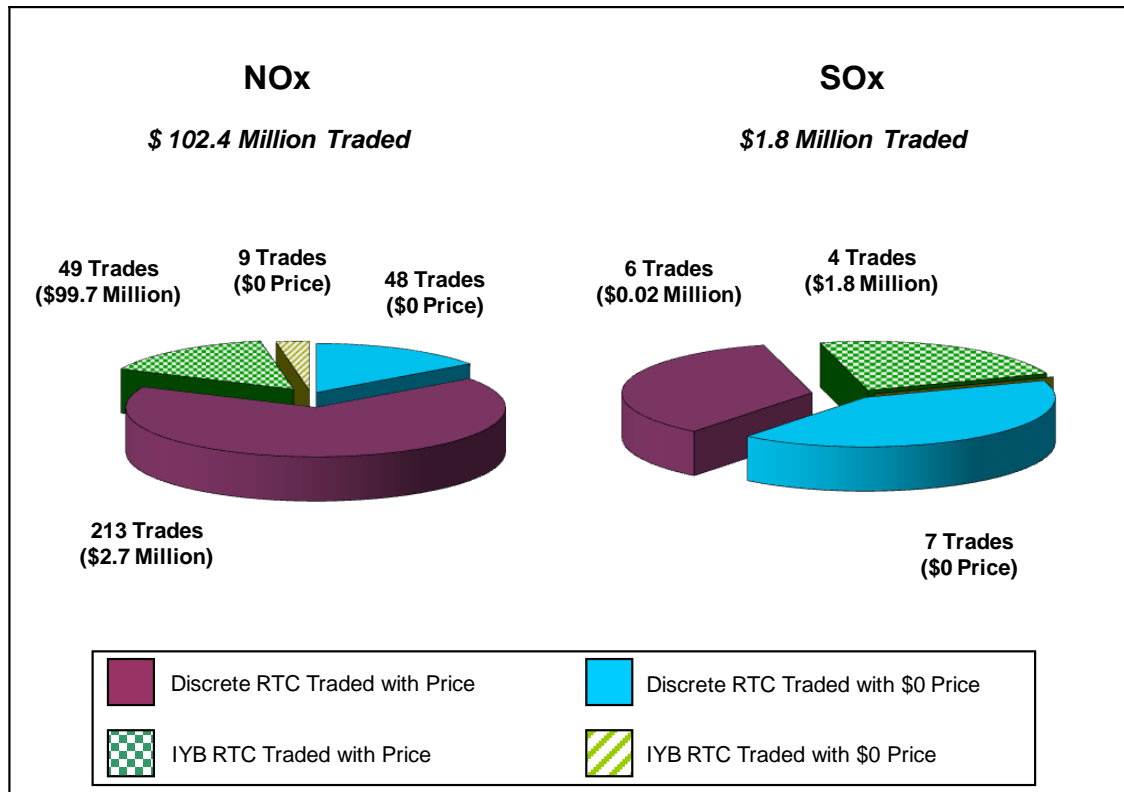
party provides a specific service (e.g., providing steam or other process components) for the second party. In return, the second party will transfer the RTCs necessary to offset emissions generated from the service. In calendar year 2014, the majority of trades with zero price were transfers between facilities under common ownership and facilities that had a change of operator.

**Figure 2-3**  
**Annual Trading Values for NOx and SOx (Excluding Swaps)**





**Figure 2-4  
Calendar Year 2014 Overall Trading Activity (Excluding Swaps)**



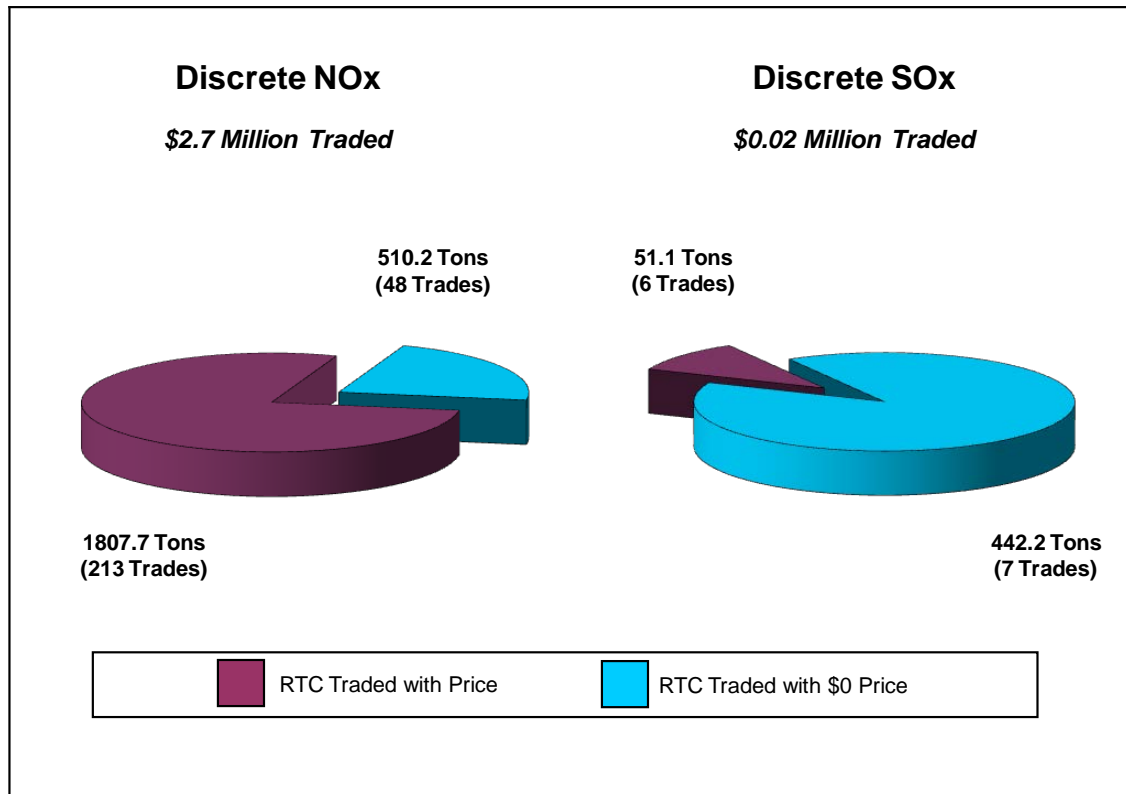
**Discrete RTC Trading Activity**

In calendar year 2014, there were a total of 261 discrete NOx RTC trades (213 trades with price and 48 trades with zero price) and 13 discrete SOx RTC trades (six trades with price and seven trades with zero price), excluding swap trades. The trading of discrete NOx RTCs included RTCs for Compliance Years 2013 through 2015. The trading of discrete SOx RTCs included RTCs for Compliance Years 2013 and 2014.

Discrete RTC trading values decreased in calendar year 2014. The 213 NOx trades with price totaled \$2.7 million in value, down from \$3.9 million in calendar year 2013. The six discrete SOx trades with price totaled \$0.02 million in value, which also is lower than the \$0.06 million traded in calendar year 2013.

In calendar year 2014, the overall quantities of discrete NOx and SOx RTCs traded were 2,318 tons and 493 tons, respectively. These quantities were all lower than those traded in calendar year 2013 (4,443 tons of NOx RTCs and 557 tons of SOx RTCs). There were 1,808 tons of discrete NOx and 51 tons of discrete SOx RTCs traded with price in calendar year 2014, decreased from 3,370 tons of NOx and 83 tons of SOx RTCs in 2013. In addition, there were 510 tons of discrete NOx RTCs and 442 tons of discrete SOx traded with zero price, decreased from 1,073 tons of NOx and 474 tons of SOx in 2013. Figure 2-5 illustrates the trading activity of discrete RTCs (excluding swaps) for calendar year 2014.

**Figure 2-5  
Calendar Year 2014 Trading Activity for Discrete RTCs (Excluding Swaps)**



**IYB RTC Trading Activity**

In calendar year 2014, there were 58 IYB NOx trades and four IYB SOx trades. The IYB NOx trades included Compliance Years 2013, 2014, 2015, 2018, and 2019 as the start year, while the IYB SOx trades all had Compliance Year 2014 as the start year. Of the 58 IYB NOx trades, 49 trades were with price and nine trades were with zero price. All of the four IYB SOx trades were with price.

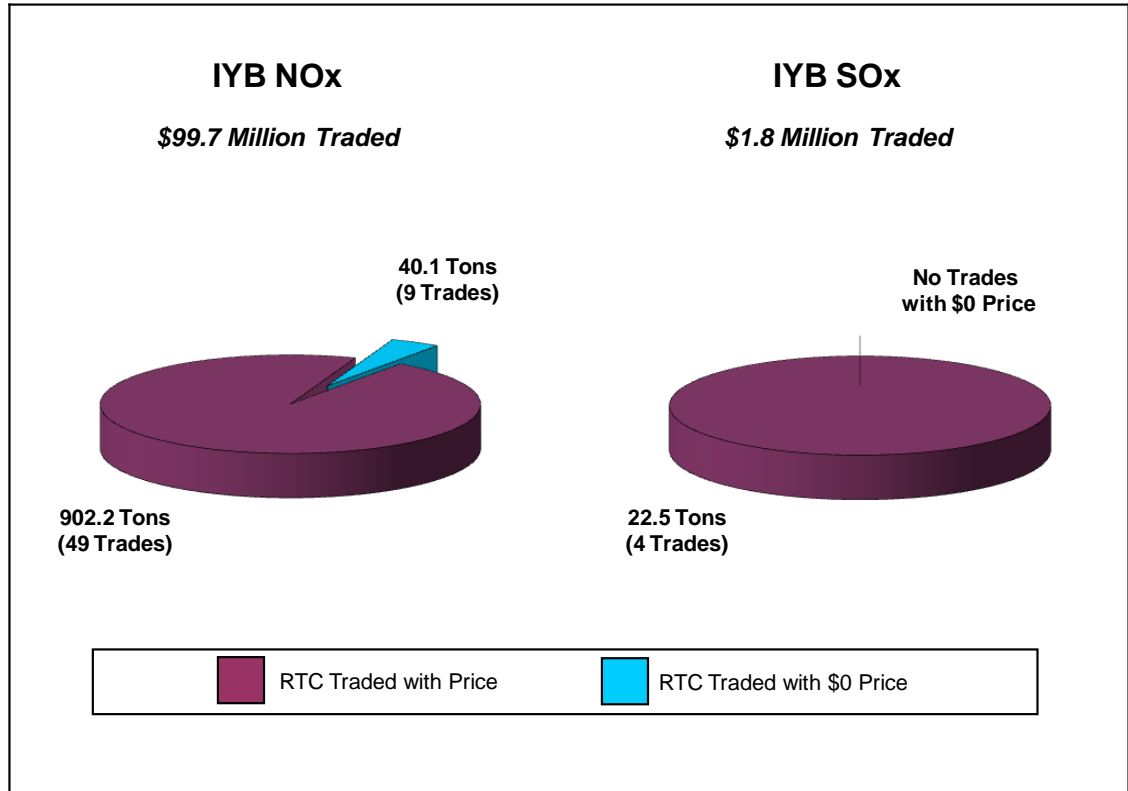
The 49 IYB NOx trades with price totaling almost \$100 million in calendar year 2014 were much higher than the 17 trades with price for \$12 million in 2013. The four IYB SOx RTC trades with price totaling \$1.8 million in calendar year 2014 were much lower in value than the four trades and \$14.4 million traded in 2013.

The total quantity of 942 tons of IYB NOx traded in calendar year 2014 was much lower than the 1,779 tons traded in calendar year 2013, however 902 of those tons were traded with price in calendar year 2014 compared to only 261 tons traded with price in calendar year 2013. The total quantity of IYB SOx traded in calendar year 2014 was 23 tons, which is considerably less than the 438 tons traded in calendar year 2013. All 23 tons of IYB SOx traded in 2014 were with price, lower than the 79 tons traded with price in calendar year 2013.

In addition to trades with price, there were also nine IYB NOx trades with zero price totaling 40 tons (there were no IYB SOx trades with zero price in calendar

year 2014). Figure 2-6 illustrates the calendar year 2014 IYB RTC trading activity excluding swap trades.

**Figure 2-6**  
**Calendar Year 2014 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.

Figure 2-7  
Discrete NOx RTC Trades (Excluding Swaps)

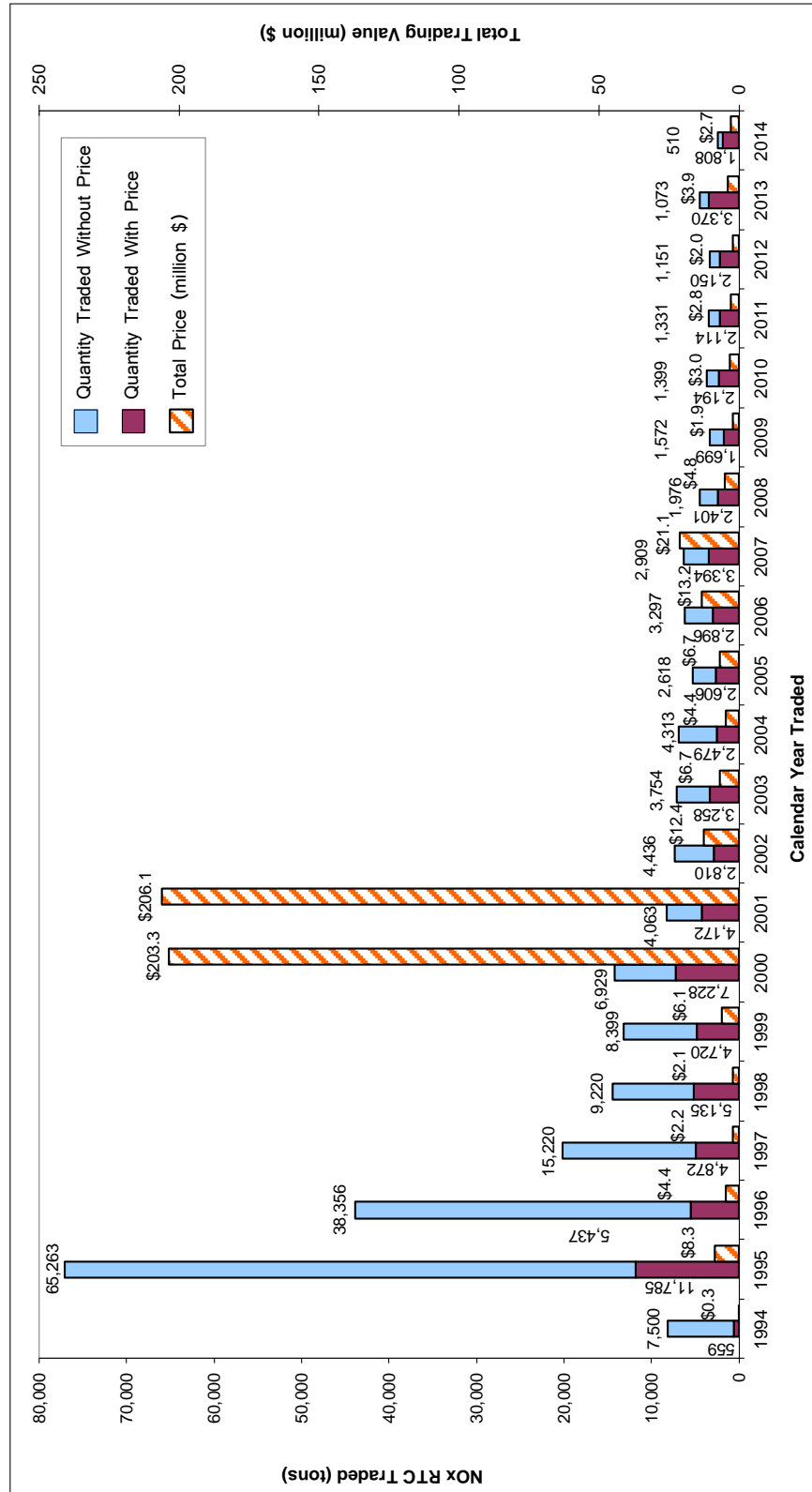


Figure 2-8  
Discrete SOx RTC Trades (Excluding Swaps)

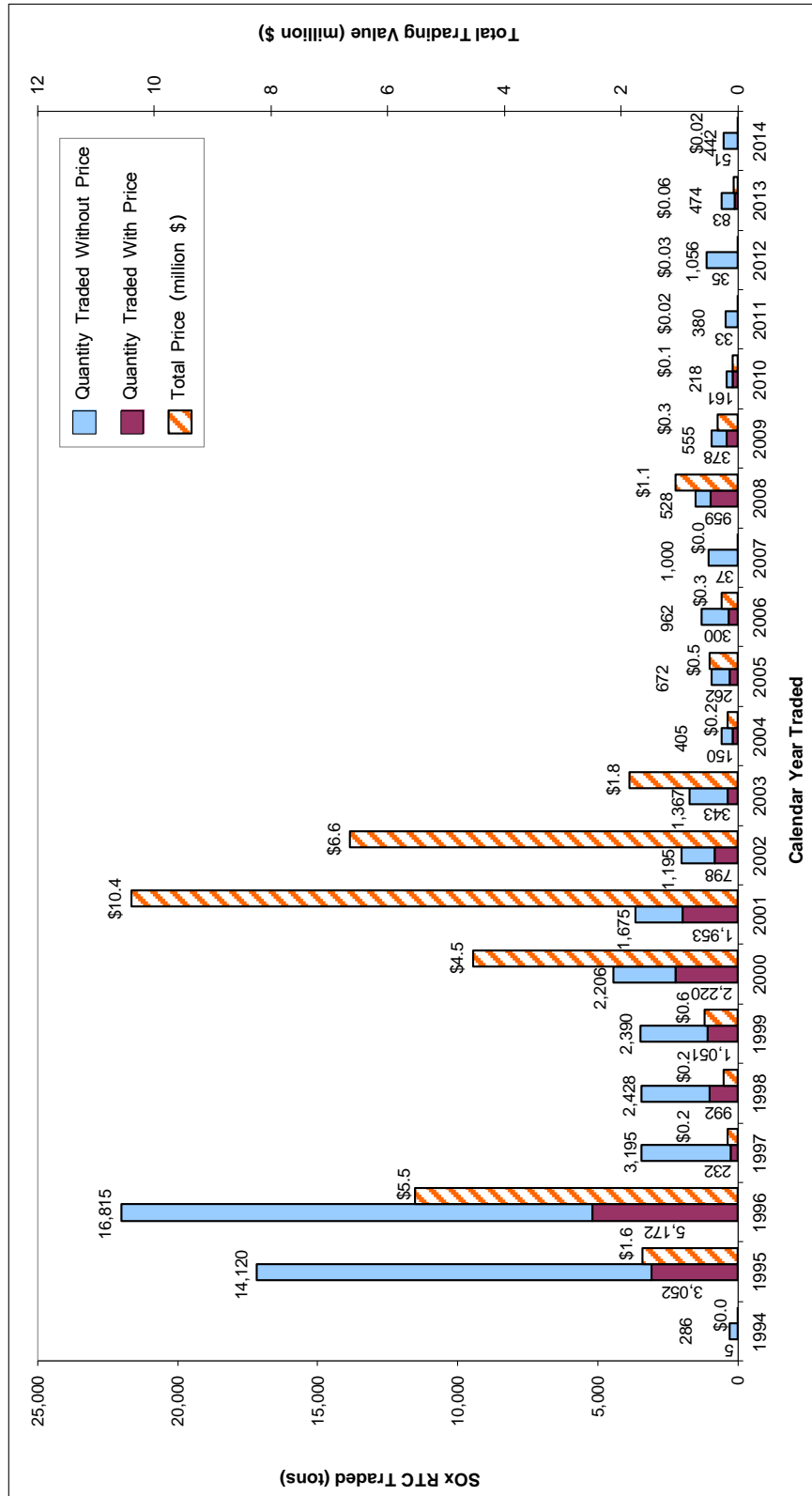


Figure 2-9  
IYB NOx RTC Trades (Excluding Swaps)

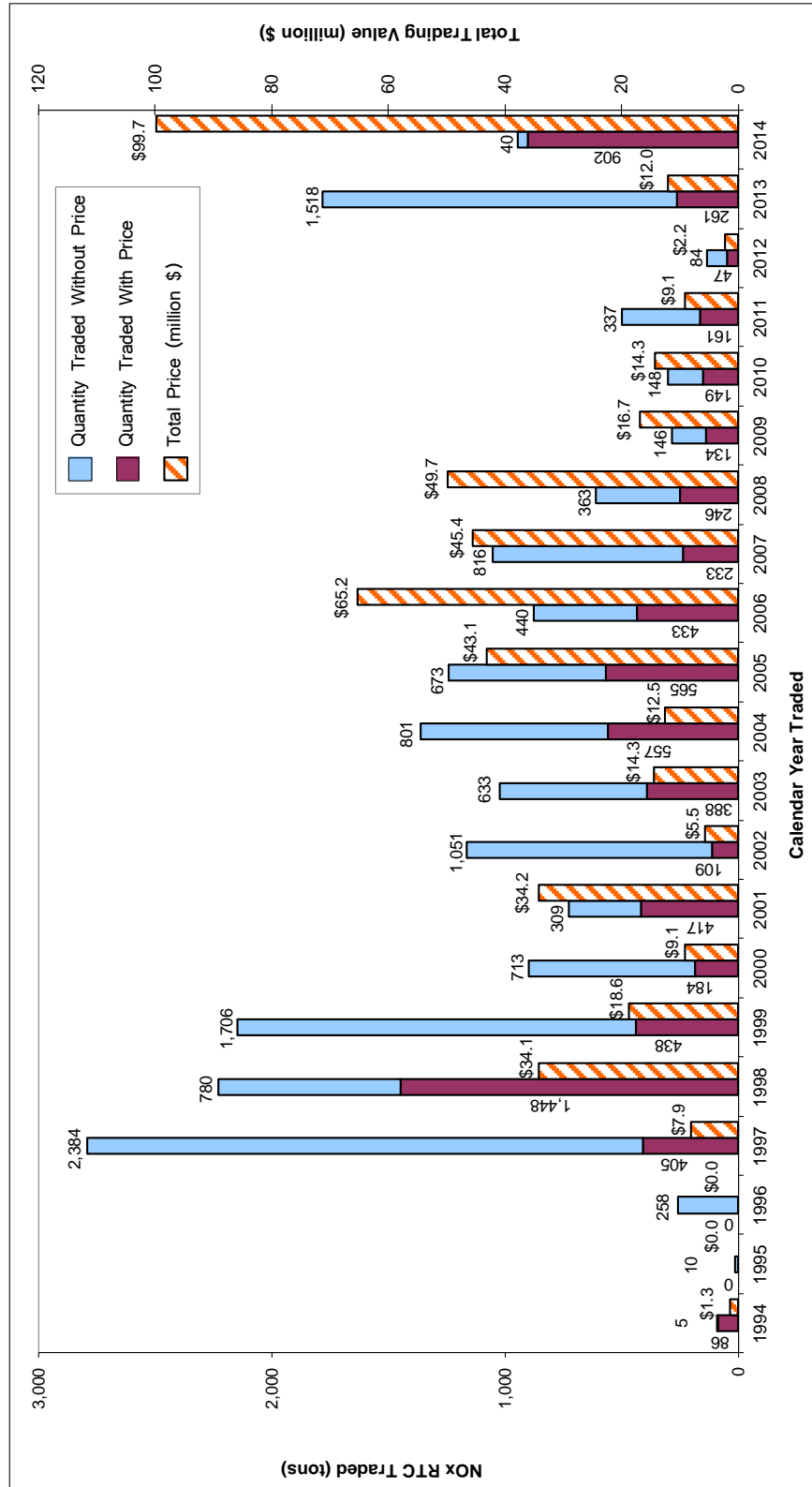
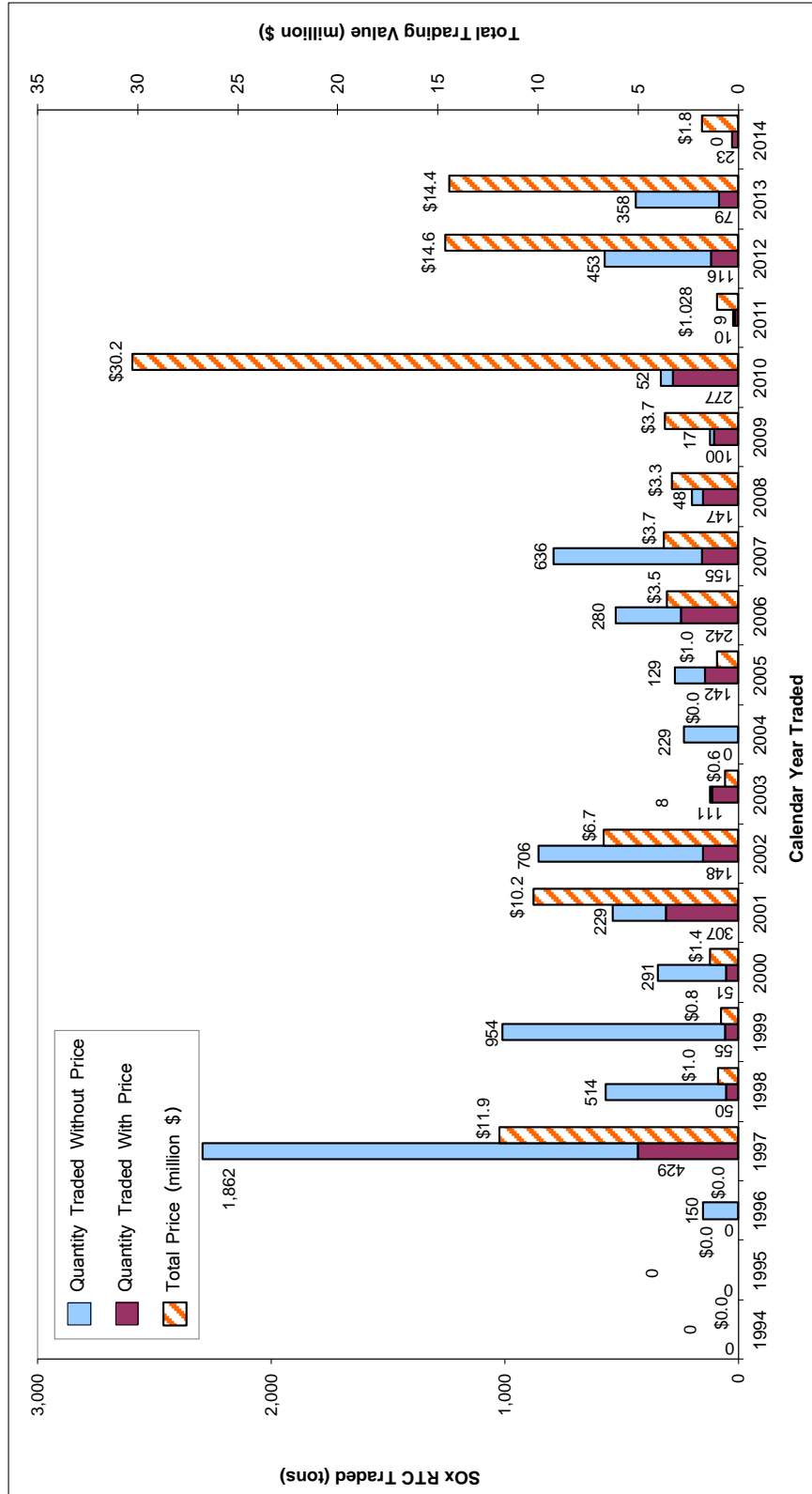


Figure 2-10  
IYB SOx RTC Trades (Excluding Swaps)



## Swap Trades

In addition to traditional trades of RTCs for a price, RTC swaps also occurred between trading partners. Most of the swap trades were exchanges of RTCs with different zones, cycles, expiration years, and/or pollutants. Some swaps involved a combination of RTCs and cash payment as a premium. There were also swaps of RTCs for ERCs. 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 \$3.25 million in total value was reported from RTCs that were swapped in calendar year 2014, of which one swap trade involved trading NOx IYB for PM10 ERCs and was valued at over \$2.42 million. 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 NOx 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 annual average prices dominated by swap transactions, and therefore, potentially not 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 2014 RTC swaps for NOx and SOx, 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
2014	\$3.24	28.5	489.6	25	25

\* 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
2014	\$0.01	0.0	14.8	1	1

\* 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 2014, the annual average prices for discrete-year NOx RTCs were \$1,065 per ton for Compliance Year 2013, \$1,910 per ton for Compliance Year 2014, and \$3,779 per ton for Compliance Year 2015. The calendar year 2014 annual average prices for discrete-year SOx RTCs were \$378 per ton for Compliance Year 2013, and \$400 per ton for Compliance Year 2014<sup>2</sup>.

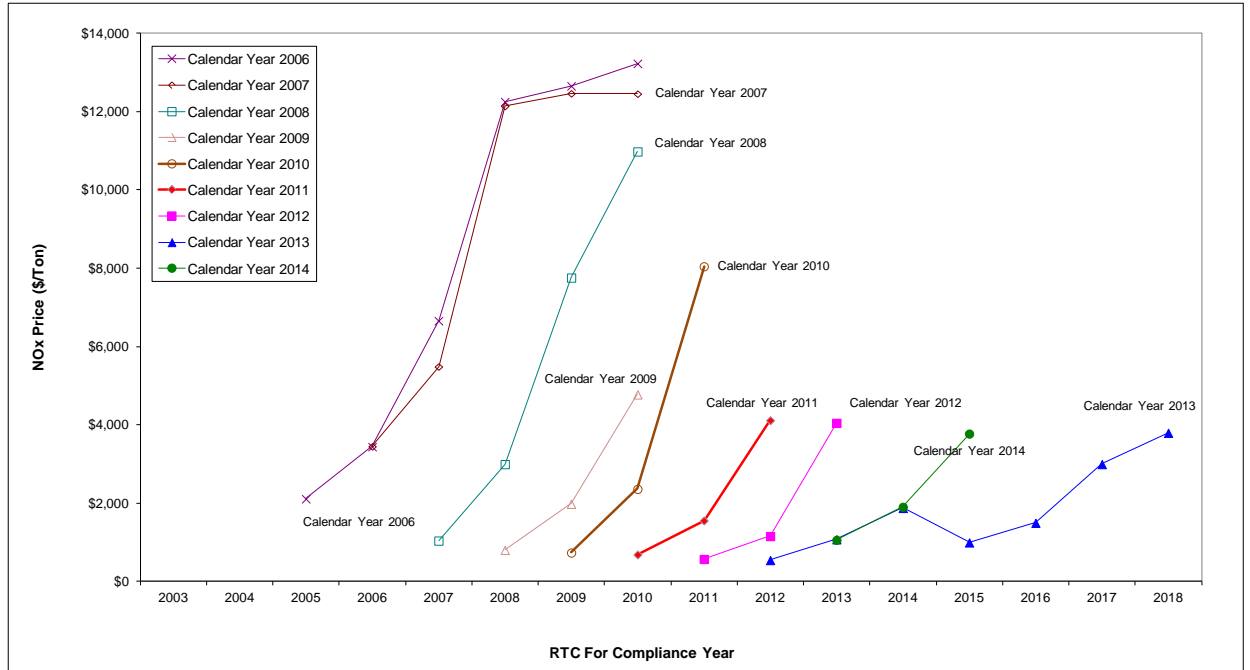
Figures 2-11 and 2-12 present the annual average prices for discrete-year NOx and SOx RTCs during calendar years 2006 through 2014, respectively. Note that prices for a Compliance Year's RTCs may also be shown for the calendar year after those RTCs expired, since the average price for each compliance 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.

Annual average prices in calendar year 2014 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 \$40,612 per ton of NOx and \$29,241 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).

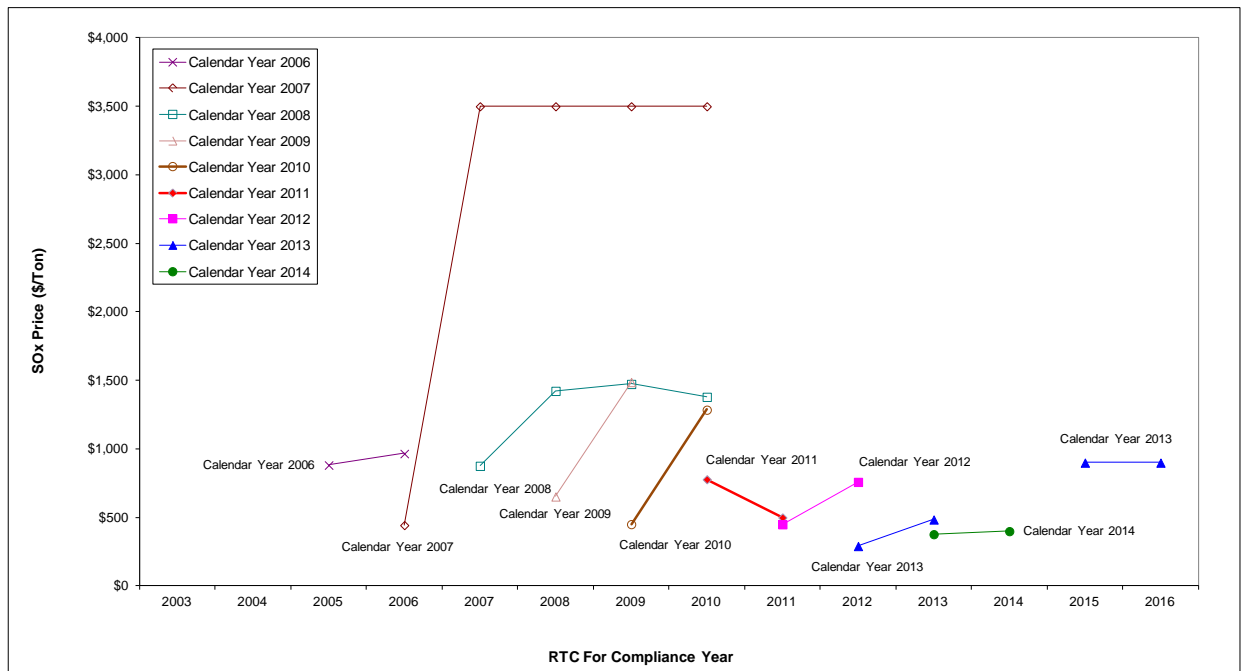
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<sup>2</sup> There were no discrete-year SOx RTCs for Compliance Year 2015 traded in calendar year 2014.

**Figure 2-11**  
**Annual Average Prices for Discrete-Year NOx RTCs during Calendar Years 2006 through 2014**



**Figure 2-12**  
**Annual Average Prices for Discrete-Year SOx RTCs during Calendar Years 2006 through 2014**



### **Twelve-Month Rolling Average Prices of Compliance Year 2014 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 2014 NOx RTCs increased gradually from January 2014 through October and then decreased through the end of the year. However, from January through August 2014, the rolling average price for NOx RTCs was dominated by a single trade at a lower than market price (300,000 pounds at \$0.50 per pound) that occurred in September 2013. Throughout 2014, the twelve-month rolling average prices did not exceed 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.

**Table 2-4  
Twelve-Month Rolling Average Prices of Compliance Year 2014 NOx RTCs**

Reporting Month	12-Month Period	Average Price* (\$/ton)
January 2014	January 2013 through December 2013	\$1,788
February 2014	February 2013 through January 2014	\$1,790
March 2014	March 2013 through February 2014	\$1,899
April 2014	April 2013 through March 2014	\$2,009
May 2014	May 2013 through April 2014	\$2,032
June 2014	June 2013 through May 2014	\$2,033
July 2014	July 2013 through June 2014	\$2,128
August 2014	August 2013 through July 2014	\$2,132
September 2014	September 2013 through August 2014	\$2,120
October 2014	October 2013 through September 2014	\$2,459
November 2014	November 2013 through October 2014	\$2,362
December 2014	December 2013 through November 2014	\$2,188
January 2015	January 2014 through December 2014	\$1,910

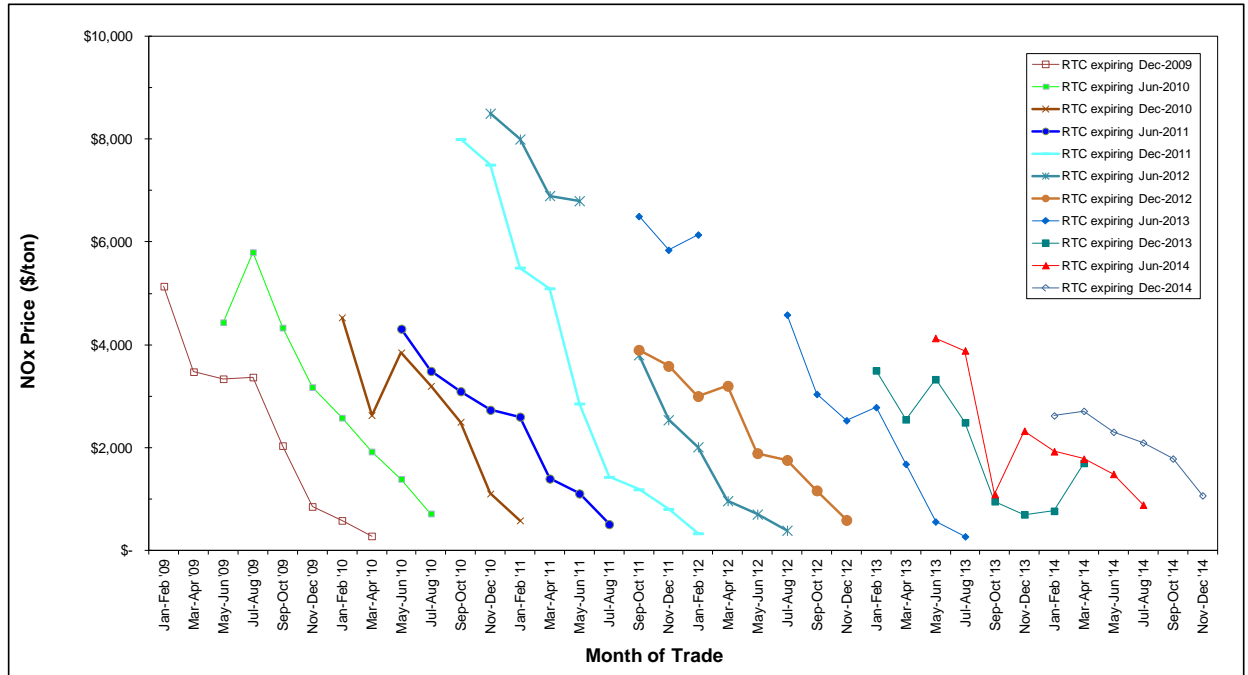
\* Through August 2014, the Rolling Average Price for 2014 NOx RTCs was dominated by a single trade in September 2013 of 300,000 pounds at a cost of \$0.50 per pound. Without this trade, the rolling average price for these periods would range from \$2,465 to \$3,197 per ton, instead of \$1,788 to \$2,120 per ton.

**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 2014 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. For calendar year 2014, there were only six discrete SOx trades with price and these prices were flat throughout the year.

**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 annual average price for IYB NOx RTCs traded in calendar year 2014 was \$110,509 per ton, which is much higher than the annual average price of \$45,914 per ton traded in calendar year 2013. The annual average price for IYB SOx RTCs traded in calendar year 2014 was \$80,444 per ton, which is much lower than the \$181,653 per ton traded in calendar year 2013. However, there were only four IYB SOx trades with price totaling 22.5 tons in 2014, which is lower than the 79 tons traded in 2013. A single facility was the buyer for all the IYB SOx traded. Data regarding IYB RTCs traded with price (excluding swap trades) for NOx and SOx RTCs and their annual average prices since 1994 are summarized in Tables 2-5 and 2-6, respectively. In calendar year 2014, the annual average IYB RTC prices did not exceed the \$609,187 per ton of NOx RTCs or the \$438,615 per ton of SOx RTCs program review thresholds established by the Governing Board for IYB RTCs 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
2014	\$99.7	902.2	49	\$110,509

\* 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
2014	\$1.8	22.5	4	\$80,444

\* No information regarding swap trades was reported until May 9, 2001.

### 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 purchase RTCs. In those transactions, one party pays a premium for the contingent right (option) to purchase 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 the RTCs at a future date. These rights may or may not be actually exercised. RTC traders are obligated to report options to SCAQMD within five business days of reaching an agreement. These reports are posted on SCAQMD's website. There was no reported trade involving the contingent right to buy or sell RTCs in calendar year 2014.

As in prior years, RTCs were used in other programs during calendar year 2014. Five facilities surrendered a total of 5.2 tons of NOx RTCs and 0.2 tons of SOx RTCs to satisfy variance conditions. One facility surrendered 29.2 tons of NOx RTCs as part of the California Environmental Quality Act (CEQA) requirement to mitigate the emissions impact from a construction project. These consisted of discrete year RTCs only.



## 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.

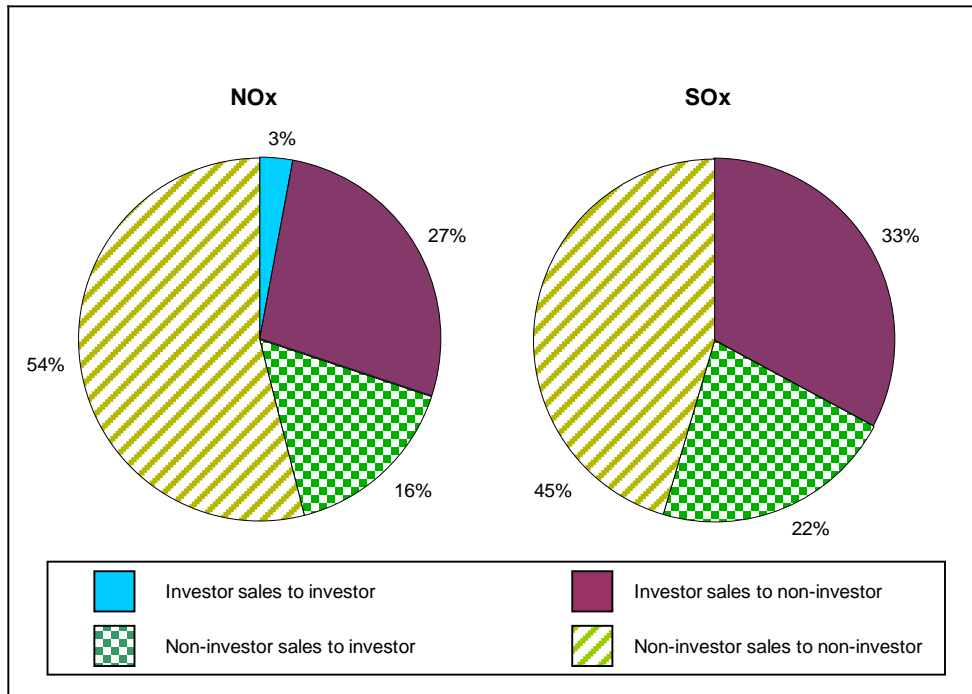
RECLAIM facilities are the original sources and users of RTCs. They usually sell their surplus RTCs by the end of the compliance year or when they have a long-term decrease in emissions. Brokers match buyers and sellers, and usually do not purchase or own RTCs. Commodity traders and private investors actually invest in and own RTCs in order to seek profits by trading them. They do not need RTCs to offset or reconcile any emissions. For purposes of discussion in this report, “investors” include all parties who hold RTCs other than RECLAIM facility permit holders and brokers.

### Investor Participation

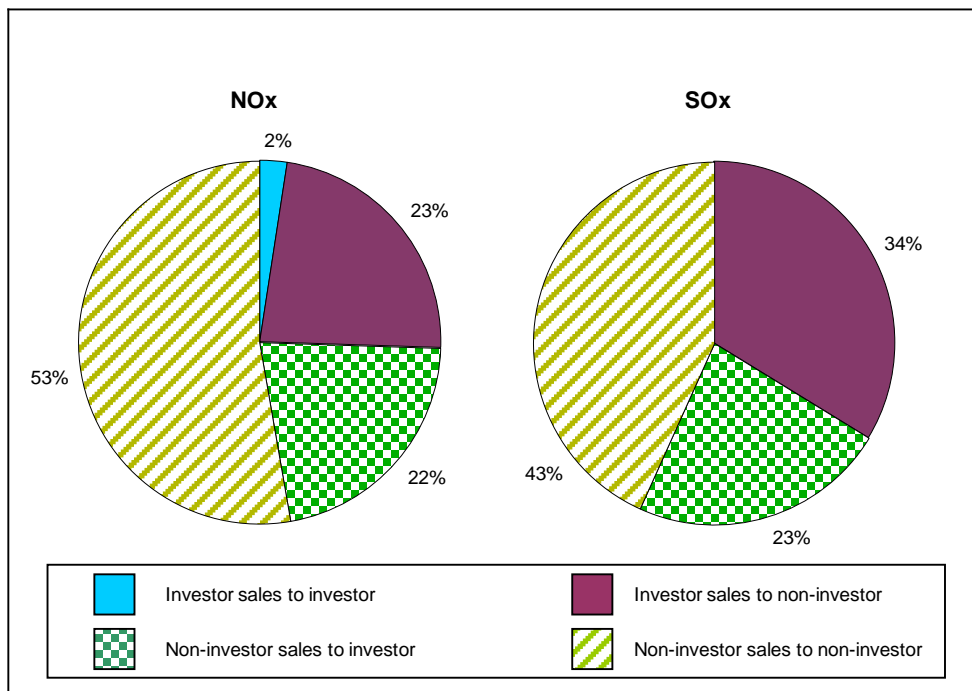
In 2014 investors were actively involved in 134 of the 213 discrete NO<sub>x</sub> RTC trades with price, four of the six discrete SO<sub>x</sub> RTC trades with price, and 44 of the 49 IYB NO<sub>x</sub> trades with price. Investors were not involved in any of the four IYB SO<sub>x</sub> trades with price.

Investors' involvement in discrete NO<sub>x</sub> and SO<sub>x</sub> trades registered with price in calendar year 2014 is illustrated in Figures 2-14 and 2-15. Figure 2-14 is based on total value of discrete NO<sub>x</sub> and SO<sub>x</sub> RTCs traded, and shows that investors were involved in 46% and 55%, respectively, of the discrete NO<sub>x</sub> and SO<sub>x</sub> trades reported by value. Figure 2-15 is based on volume of discrete RTCs traded with price and shows that investors were involved in 47% and 57% of the discrete NO<sub>x</sub> and SO<sub>x</sub> trades by volume, respectively. Figures 2-16 and 2-17 provide similar data for IYB NO<sub>x</sub> and SO<sub>x</sub> trades, and show that investors were involved in 64% of IYB NO<sub>x</sub> trades on a reported value basis, and 59% of IYB NO<sub>x</sub> trades on the basis of the volume traded with price.

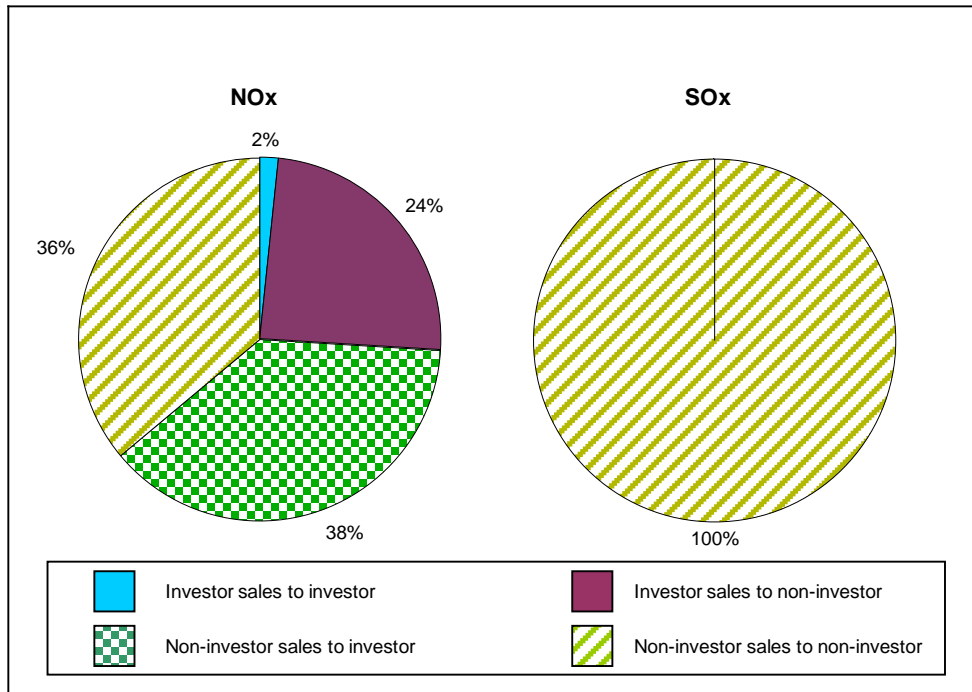
**Figure 2-14**  
**Calendar Year 2014 Investor-Involved Discrete NOx and SOx Trades Based on Value Traded**



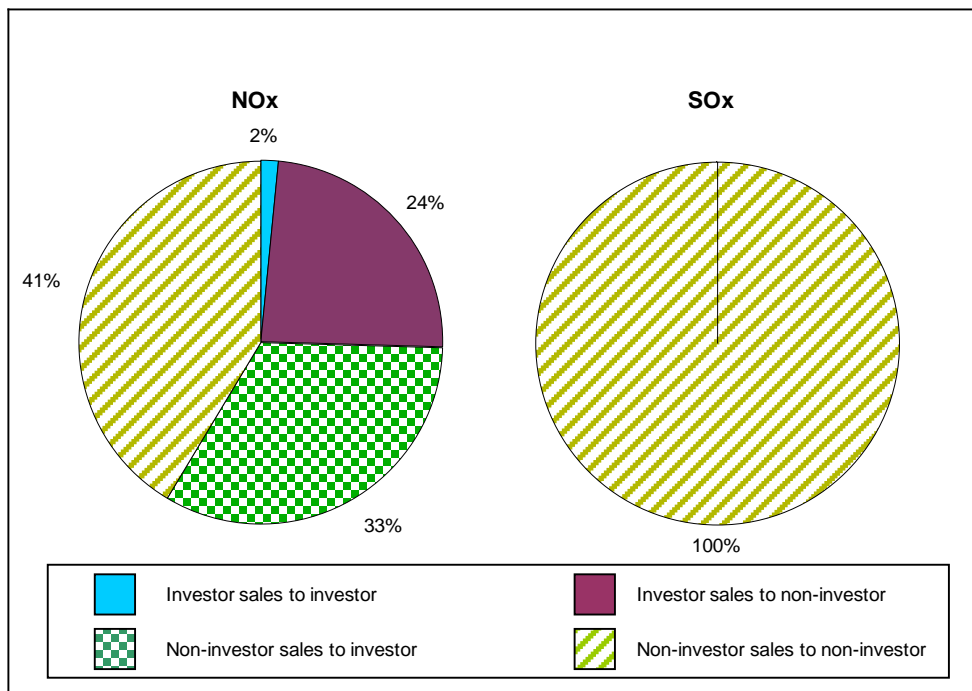
**Figure 2-15**  
**Calendar Year 2014 Investor-Involved Discrete NOx and SOx Trades Based on Volume Traded with Price**



**Figure 2-16**  
**Calendar Year 2014 Investor-Involved IYB NOx and SOx Trades Based on Value Traded**



**Figure 2-17**  
**Calendar Year 2014 Investor-Involved IYB NOx and SOx Trades Based on Volume Traded with Price**



As of the end of calendar year 2014, investors' holding of IYB NOx RTCs had decreased slightly to 4.6% compared to 4.9% at the end of calendar year 2013. Out of the 4.6% held, mutual fund investors held 1.4% of IYB NOx RTCs, down from 2.7% at the end of calendar year 2013. Investors' holding of IYB SOx RTCs was unchanged at 0.9% at the end of calendar year 2014. No IYB SOx RTCs are currently held by mutual fund investors.

The available supply of IYB RTCs are generally from facilities that have permanently reduced emissions through the installation of control equipment, the modification or replacement of old equipment, or equipment and/or facility shutdowns. There were four RECLAIM facilities that shut down during Compliance Year 2013. These four facilities participated in the NOx RECLAIM program only and held a total of 15.6 tons of IYB NOx RTCs prior to shutdown. With the exception of 1.6 tons of IYB NOx RTCs still held by one facility, the balance was sold to investors.

### **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, RECLAIM facility operators 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 facility audits. For Compliance Year 2013, the total RECLAIM NOx emissions were 7,326 tons. If the future total NOx emissions increased to the Compliance Year 2007 level of 8,796 tons (as illustrated in Figure 7-1), the NOx RTC surplus would be only 903 tons (9% of allocation), which is almost in line with the 10% compliance margin traditionally held by RECLAIM facilities. Therefore, the current aggregate investors' holdings of 4.6% of IYB NOx 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 NOx 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 NOx RTCs by investors as a group is still small relative to the total supply of IYB NOx RTCs (4.6% 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. Investors have the ability to purchase RTCs at any time so there is the potential for investors' holdings of IYB NOx 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. Staff anticipates that there are two primary mechanisms that drive a facility to implement additional control technologies: Implementation of Best Available Control Technology (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 likely to be significant when RECLAIM facilities increase production or the supply of RTCs decreases as a result of amendments to Rule 2002 implementing BARCT as discussed in Chapter 3. The first iteration of amending Rule 2002 to reduce the NOx RTC supply to reflect changes in BARCT was adopted by the Governing Board in January 2005 and phased in from Compliance Year 2007 through Compliance Year 2011. Facilities had ample notice of these reductions to the NOx RTC supply and the market was able to respond as designed—emissions were reduced such that aggregate emissions remained below aggregate allocations each year. The first iteration for SOx (adopted November 2010 with phased implementation commencing in Compliance Year 2013 and full implementation starting with Compliance Year 2018) is currently underway. Again, facilities had ample notice and have been able to keep aggregate SOx emissions below aggregate allocations without significant price increases. A second round of amendments to Rule 2002 to implement BARCT by reducing the NOx RTC supply is currently under development and is discussed in more detail in Chapter 3. Adoption of such amendments will put pressure on RECLAIM facility operators to reduce emissions so as to keep them below their RTC holdings. It is too soon to tell how the market will respond to the enacted SOx reduction and the proposed NOx amendments, but if adequate emissions controls are not implemented in a timely manner there is the potential for a seller's market for NOx RTCs to develop, which would make RTCs held by investors increasingly important to the market, as described above. SCAQMD staff will continue to monitor market activity and prices throughout the implementation and will report back to the Governing Board regularly.

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.

## CHAPTER 3 EMISSION REDUCTIONS ACHIEVED

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### Summary

*For Compliance Year 2013, aggregate NOx emissions were below total allocations by 24% and aggregate SOx emissions were below total allocations by 35%. No emissions associated with breakdowns were excluded from reconciliation with facility allocations in Compliance Year 2013. 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 2013. With respect to the Rule 2015 backstop provisions, Compliance Year 2013 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 reductions in allocations as a result of BARCT implementation. In January 2005, the Board adopted an amendment to Rule 2002 to further reduce RECLAIM NOx allocations to implement the latest BARCT. These changes resulted in cumulative NOx allocation reductions of 22.5% (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. The Board also amended Rule 2002 in November 2010 to implement changes in BARCT for SOx. Specifically, the November 2010 amendments call for reducing aggregate RECLAIM SOx emissions by 48% (2,081 tons/year), with the reductions phased-in from Compliance Year 2013 through Compliance Year 2019. A little over half of the SOx reductions occurred in Compliance Year 2013. Finally, there is an ongoing rulemaking effort to achieve additional NOx reductions pursuant to the 2012 AQMP Control Measure CMB-01 and to address requirements for demonstrating Best Available Retrofit Control Technology (BARCT) equivalency in accordance with California Health and Safety Code §40440. The extent of the NOx emission reductions is currently under discussion. This rule is scheduled to be amended in the second quarter 2015.

### Emissions Audit Process

Since the inception of the RECLAIM program, SCAQMD staff 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 NOx emissions for each facility are posted on SCAQMD's web page after the audits are completed. 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 NOx or SOx 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.

Since the last annual report, five facilities' previous year audits were re-opened because either the SCAQMD staff discovered additional information while performing current year audits or the facility self-disclosed information that affected emission calculations. The re-opened audits affected NOx emissions reported for Compliance Years 2007 through 2012. For some of the five facilities, multiple years' audits were impacted. Table 3-1 summarizes the changes to the audited emissions for the impacted facilities. The resulting changes to the overall audited RECLAIM NOx emissions for each compliance year were less than 0.1% increases for Compliance Years 2007 through 2011. For Compliance Year 2012, the changes caused a decrease of 1.5% in overall audited NOx emissions. None of these changes resulted in aggregate RECLAIM NOx emissions exceeding RECLAIM aggregate Allocations for the corresponding compliance years.

**Table 3-1  
Summary of Re-Opened Audits**

Compliance Year	Original Audited NOx Emissions (lbs)	Updated Audited NOx Emissions (lbs)	Change in Audited NOx Emissions (lbs)	% Change	Number of Facilities Involved
2007	253,572	256,442	2,870	1.1%	2
2008	239,075	245,117	6,042	2.5%	2
2009	215,166	226,068	10,902	5.1%	2
2010	215,711	226,499	10,788	5.0%	2
2011	138,861	138,850	-11	-0.01%	2
2012	751,134	514,107	-237,027	-31.6%	1

Table 3-2 and Figure 3-1 show aggregate audited NOx emissions for Compliance Years 1994 through 2013. Programmatically, there were excess NOx RTCs remaining after accounting for audited NOx emissions for every compliance year since 1994, except for Compliance Year 2000 when NOx emissions exceeded the total allocations due to the California energy crisis. Since Compliance Year 2007, the first year of the programmatic reduction in RECLAIM NOx allocations that was adopted by the Governing Board as part of the January 2005 rule amendments, the unused NOx RTCs have been at least 20 percent of the aggregate allocations. Specifically, Compliance Year 2013 NOx emissions were below total allocations by 24%. Even though there was a slight increase in aggregate NOx emissions in Compliance Year 2012 when compared to Compliance Year 2011 emissions, Compliance Year 2013 levels are back down to the emission levels seen in Compliance Years 2009 and 2011.



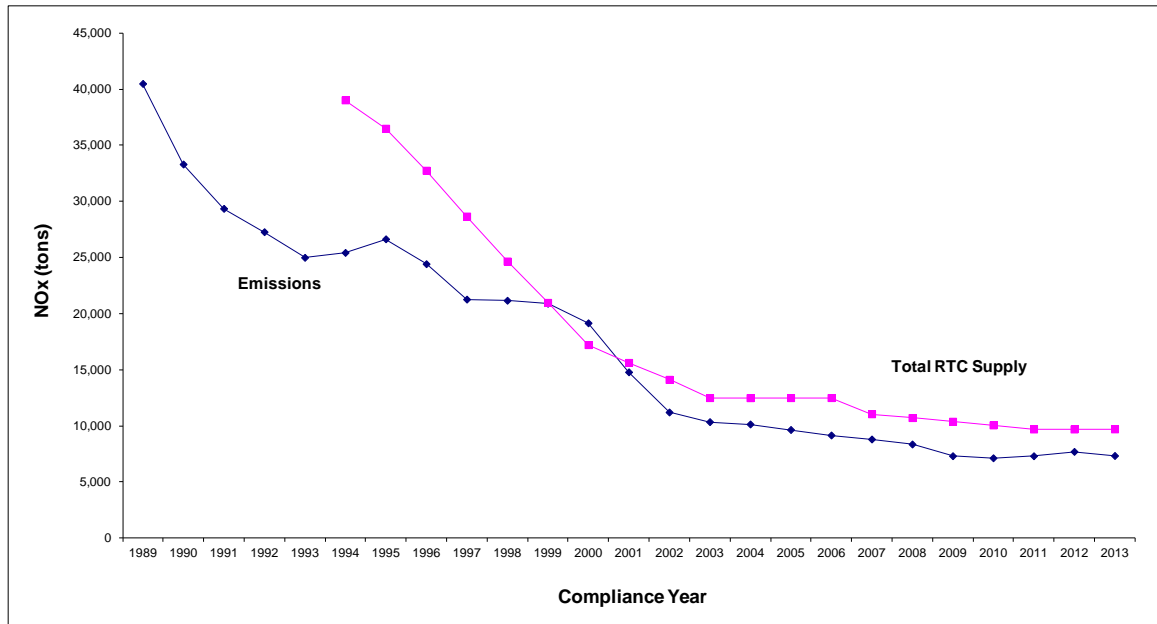
**Table 3-2**  
**Annual NOx Emissions for Compliance Years 1994 through 2013**

Compliance Year	Audited Annual NOx Emissions <sup>1</sup> (tons)	Audited Annual NOx Emissions Change from 1994 (%)	Total NOx RTCs <sup>2</sup> (tons)	Unused NOx RTCs (tons)	Unused NOx RTCs (%)
1994	25,420	0%	39,016	13,596	35%
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	8,796	-65%	11,046	2,250	20%
2008	8,349	-67%	10,705	2,356	22%
2009	7,306	-71%	10,377	3,071	30%
2010	7,121	-72%	10,053	2,932	29%
2011	7,302	-71%	9,690	2,388	25%
2012	7,691	-70%	9,689	1,998	21%
2013	7,326	-71%	9,699	2,373	24%

<sup>1</sup> 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.

<sup>2</sup> Total RTCs = Allocated RTCs + RTCs from ERC conversion.

**Figure 3-1  
NOx Emissions and Available RTCs**



Similar to Table 3-2 and Figure 3-1 for NOx, Table 3-3 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 3-3 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 2013, SOx emissions were below total allocations by 35%. The unused SOx RTCs from Compliance Year 2009 and on has remained 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.

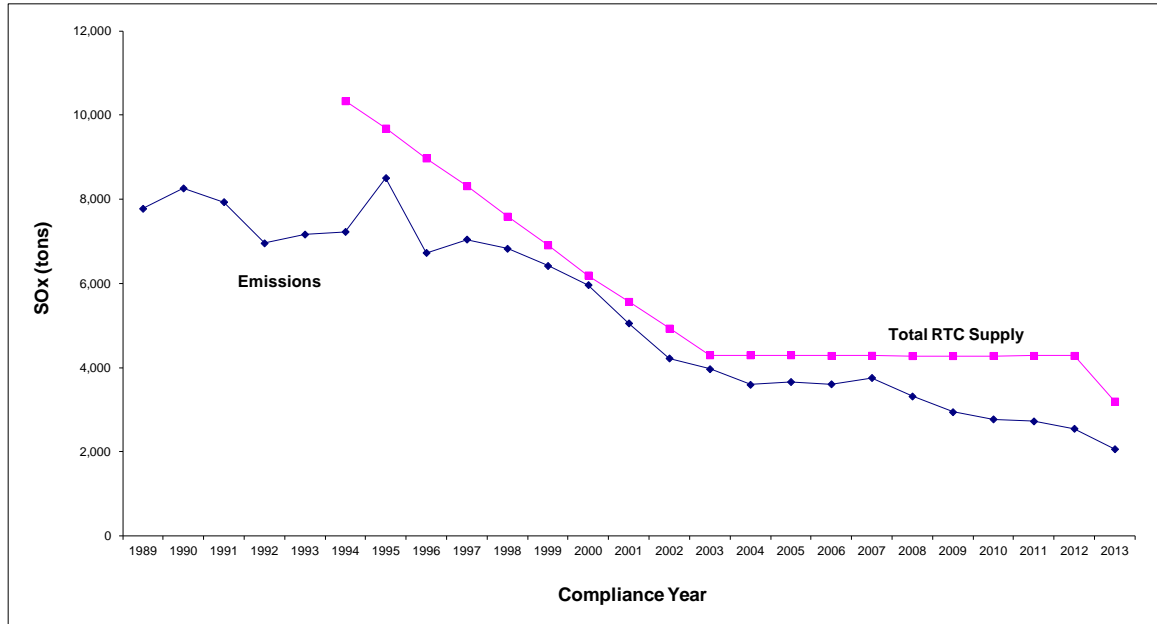
**Table 3-3**  
**Annual SOx Emissions for Compliance Years 1994 through 2013**

Compliance Year	Audited Annual SOx Emissions <sup>1</sup> (tons)	Audited Annual SOx Emissions Change from 1994 (%)	Total SOx RTCs <sup>2</sup> (tons)	Unused SOx RTCs (tons)	Unused SOx RTCs (%)
1994	7,230	0%	10,336	3,106	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%
2013	2,066	-71%	3,198	1,132	35%

<sup>1</sup> 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.

<sup>2</sup> 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 rules<sup>1</sup> 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.

None of the new or amended rules approved during the time period of this annual audit would result in different impacts to RECLAIM or non-RECLAIM facilities.

During Compliance Year 2013, one of the subsumed Regulation XIII rules, 1309 – Emission Reduction Credits and Short Term Credits, was amended on July 5, 2013. This rule amendment allowed the reissuance of unused ERCs, provided the request is made within two years of issuance of the Permit to Construct and construction had not commenced. Another Regulation XIII subsumed rule, Rule 1304.1 – Electrical Generating Facility Fee For Use Of Offset Exemptions, adopted September 6, 2013, set a fee for Electric Generating Facilities electing to meet their emissions offset obligations for boiler replacement projects by using offsets provided by the SCAQMD. These fee proceeds are invested in air pollution improvement strategies consistent with the AQMP goals. Although the provisions of Regulation XIII apply to all facilities, Rule 2001 identifies Regulation XIII as subsumed by RECLAIM, and thereby the requirements of amended Rule 1309 and adopted Rule 1304.1 do not apply to NOx at NOx RECLAIM facilities or

<sup>1</sup> See Tables 1 and 2 of Rule 2001.

to SO<sub>x</sub> at SO<sub>x</sub> RECLAIM facilities. The other requirements of both rules apply equally to both RECLAIM and non-RECLAIM facilities.

Two other subsumed rules, Rules 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters, and 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters, were amended on November 1, 2013. The amendments to both Rules 1146 and 1146.1 addressed a SIP approvability issue relating to rule enforceability raised by U.S. EPA. The amendment to each rule clarified that source test results indicating a unit's exceedance of the rule limits constitute a rule violation. However, both amended rules still allow diagnostic emission checks for boiler maintenance purposes. None of the changes affected rule emission limits. Since the November 2013 amendments to Rules 1146 and 1146.1 do not affect NO<sub>x</sub> or SO<sub>x</sub>, they apply equally to both RECLAIM and non-RECLAIM facilities.

Other rules amended or adopted during Compliance Year 2013 but not subsumed by RECLAIM include Rule 1420.1 – Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities, Rule 1130 – Graphic Arts, Rule 1155 – Particulate Matter (PM) Control Devices, Rule 2202 – On-Road Motor Vehicle Mitigation Options, Rule 301 – Permitting and Associated Fees, and Rule 311 – Air Quality Investment Program (AQIP) Fees.

On January 10, 2014, Rule 1420.1 – Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities was amended to establish requirements for owners or operators of large lead-acid battery recycling facilities to reduce emissions of arsenic and other key toxic air contaminants. The purpose of the amendment was to continue to ensure attainment of the National Ambient Air Quality Standards (NAAQS) for Lead as well as reduce emissions of arsenic, benzene, and 1,3-butadiene and other toxic air contaminant emissions contributing to health risks from large lead-acid battery recycling facilities. The amendment also included requirements for ambient air concentration limits for arsenic, as well as hourly emission limits of arsenic, benzene, and 1,3-butadiene. Additionally, the amendment contained administrative, monitoring and source testing requirements for stack emissions.

During the public hearing for this amendment, the Governing Board removed the requirement that affected facilities conduct a multi-metals demonstration program to continuously monitor lead, arsenic, and other metals. The Governing Board directed staff to work with stakeholders and return to the March 7, 2014 Public Hearing for Board action on the multi-metal CEMS demonstration program. As a result, on March 7, 2014, Rule 1420.1 was amended requiring affected facilities to provide funding and participate in a multi-metals CEMS demonstration program. Clarifying language was also added to require affected facilities to reimburse SCAQMD for funds spent to deploy independent third party contractors who conducted investigations of unplanned shutdowns.

The May 2, 2014 amendment to Rule 1130 – Graphic Arts incorporated certain U.S. EPA Control Techniques Guidelines (recommendations applicable to printing operations that were not included in prior amendments) that pertain to the overall add-on control device efficiency and VOC content requirements for fountain solutions. Amended Rule 1130 further added prohibition of storage of

non-compliant VOC-containing materials at a worksite, removed obsolete rule language, updated definitions for consistency with other SCAQMD rules, added a rule exemption for graphic arts materials that have a VOC content of no more than 10 g/L, as applied, and made minor corrections and clarifications.

Rule 1155 – Particulate Matter (PM) Control Devices was amended on May 2, 2014 to address concerns raised by U.S. EPA in July of 2010. The amendment to Rule 1155 in May 2014 clarified that certain provisions of Rule 401 – Visible Emissions and the provisions of Rule 404 – Particulate Matter - Concentration are applicable to equipment subject to Rule 1155.

Finally, Rule 2202 – On-Road Motor Vehicle Mitigation Options, along with the accompanying rule Implementation Guidelines, Rule 311 – Air Quality Investment Program (AQIP) Fees, and Rule 301 – Permitting and Associated Fees were amended on June 6, 2014. Sections of Rule 2202 and the Implementation Guidelines were amended to address the use of ERCs and clarify the use of other existing emission credits. Rule 311, which is a program option for applicable worksites within Rule 2202, was amended to reduce the AQIP per employee fee, to more accurately reflect the costs to obtain the required emission reductions. The purpose of these amendments was to address the future availability of ERCs for use by stationary sources by no longer allowing ERCs to be transferred into the Rule 2202 program and subjecting those ERCs that currently reside in the program to an annual discount to establish a more level playing field for the various compliance options. The amendments to Rule 301 add a transfer fee for the administration and tracking of Short Term Emission Reduction Credits,

Since Rules 1420.1, 1130, 1155, 2202, 301 and 311 are not subsumed under RECLAIM, the requirements of these rules apply equally to RECLAIM and non-RECLAIM facilities. The amendments to Rules 1309, 1304.1, 1146 and 1146.1 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 (NOx) and Oxides of Sulfur (SOx) in November 2010. These amendments call for SOx 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 had remained unchanged at the Compliance Year 2012 level, then emissions would exceed allocations in Compliance Year 2017. On the other hand, aggregate Compliance Year 2013 emissions were below aggregate allocations for 2019 and all subsequent years, so if overall SOx emissions remain constant at the Compliance Year 2013 level they would remain below allocations. Similarly, aggregate NOx emissions in Compliance Year 2005 and all subsequent compliance years were below aggregate allocations for Compliance Year 2013 and all subsequent years. It is anticipated that the on-going effort (described below) to reduce NOx allocations pursuant to Control Measure CMB-01 is likely to require further NOx emission reductions from RECLAIM facilities.

During Compliance Year 2013, there were no new amendments to Regulation XX adopted by SCAQMD's Governing Board. However, on December 7, 2012 the SCAQMD Governing Board adopted the 2012 AQMP, including Control Measure CMB-01 – Further NO<sub>x</sub> Reductions from RECLAIM, that proposes to reduce NO<sub>x</sub> emissions from RECLAIM sources by three to five tons per day by 2020. The extent of the NO<sub>x</sub> emission reductions is currently under discussion. The proposed amendment is expected to implement Control Measure CMB-01, and also address Best Available Retrofit Control Technology (BARCT) equivalency in accordance with California Health and Safety Code §40440. Changes to some RECLAIM monitoring and reporting requirements are also proposed. Rule development is currently underway to implement this control measure with an anticipated public hearing in the second quarter of 2015.

## Breakdowns

Pursuant to Rule 2004(i) – Breakdown Provisions, a facility may request that emission 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 total unused RTCs within the program, 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 3-4, a review of APEP reports for Compliance Year 2013 found that no facilities requested to exclude breakdown emissions from being counted against their allocations. Thus, for Compliance Year 2013, no additional RTCs are required to offset breakdown emissions pursuant to Rule 2015(d)(3).

**Table 3-4  
Breakdown Emission Comparison for Compliance Year 2013**

<b>Emittant</b>	<b>Compliance Year 2013 Unused RTCs (tons)</b>	<b>Unmitigated Breakdown Emissions<sup>1</sup> (tons)</b>	<b>Remaining Compliance Year 2013 RTCs (tons)</b>
NOx	2,373	0	2,373
SOx	1,132	0	1,132

<sup>1</sup> Data for unmitigated breakdown emissions (not counted against Allocation) as reported under APEP reports.

### Impact of Changing Universe

As discussed in Chapter 1, six NOx facilities were included, one existing NOx facility was included into the SOx market, no facility was excluded and four facilities shut down in Compliance Year 2013. 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. Existing facilities 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. In Compliance Year 2013, one existing facility chose to opt into the RECLAIM program and three existing facilities were included into the RECLAIM program based on the Rule 2001 threshold of actual NOx and/or SOx emissions greater than or equal to four tons per year. One of these three existing facilities included based on meeting or exceeding the Rule 2001 threshold, was already a NOx RECLAIM facility that amended its reported SOx emissions for past years and, as such, was included in SOx RECLAIM. An additional RECLAIM facility that was previously shut down re-started its operation and was included back into the universe of active RECLAIM facilities in Compliance Year 2013.

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 were no new facilities that elected to opt-in during Compliance Year 2013. However, one facility that was included pursuant to the Rule 2001 threshold is considered a new facility, as defined by Rule 2000. 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 NOx and SOx RTCs are not impacted. In Compliance Year 2013, there were no facilities included into the RECLAIM universe as a result of the partial change of operator of a facility already in RECLAIM. Although there were no partial changes of operator in Compliance Year 2013, there was a partial relocation of a RECLAIM facility to a new location. Similar to a partial change of operator, no additional allocations were issued as a consequence of the partial relocation. As such, the supply of RTCs was not impacted by this partial relocation.

The shutdown of a RECLAIM facility results in a reduction in actual emissions. The shut down 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. Shut down 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, four RECLAIM facilities (all NOx-only facilities) shut down permanently in Compliance Year 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 in Compliance Year 2013.

In summary, 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 supply<sup>2</sup>, 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 2013 NOx and SOx audited emissions and initial allocations for facilities that were shut down, excluded, or included into the program during Compliance Year 2013 are summarized in Tables 3-5 and 3-6.

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<sup>2</sup> Facilities that were initially permitted after the October 1993 adoption of RECLAIM and that provided NOx or SOx ERCs to offset their emissions are issued RTCs corresponding to the ERCs provided.

**Table 3-5**  
**NOx Emissions Impact from the Changes in Universe (Tons)**

Category	Compliance Year 2013 NOx Emissions (tons)	Allocations Issued for Compliance Year 2013 NOx RTCs (tons)
Shutdown Facilities	2.1	29.8
Excluded Facilities	Not applicable	Not applicable
Included Facilities	22.1	10.8
RECLAIM Universe	7,326	9,699

**Table 3-6**  
**SOx Emissions Impact from the Changes in Universe (Tons)**

Category	Compliance Year 2013 SOx Emissions (tons)	Allocated Compliance Year 2013 SOx RTCs (tons)
Shutdown Facilities	Not applicable	Not applicable
Excluded Facilities	Not applicable	Not applicable
Included Facilities	20.8	0.05
RECLAIM Universe	2,066	3,198

## 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 annual average price of RTCs exceeds \$15,000 per ton. Compliance Year 2013 aggregate NOx and SOx emissions were both below aggregate allocations as shown in Figures 3-1 and 3-2. At the same time, annual average prices for NOx and SOx RTCs in calendar year 2013 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

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#### 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 2013, a total of 70 NO<sub>x</sub> RECLAIM facilities had NSR NO<sub>x</sub> emission increases, and 11 SO<sub>x</sub> RECLAIM facilities had NSR SO<sub>x</sub> emission increases due to expansion or modification. Consistent with all prior compliance years, there were sufficient NO<sub>x</sub> and SO<sub>x</sub> 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<sub>x</sub> emission increases and a 1-to-1 offset ratio for SO<sub>x</sub> emission increases on a programmatic basis. In Compliance Year 2013, RECLAIM provided an offset ratio based on the compliance year's total unused allocations and total NSR emission increases of 6-to-1 for NO<sub>x</sub>, demonstrating federal equivalency. RECLAIM inherently complies with the federally-required 1-to-1 SO<sub>x</sub> offset ratio for any compliance year, provided aggregate SO<sub>x</sub> emissions under RECLAIM are lower than or equal to aggregate SO<sub>x</sub> allocations for that compliance year. As shown in Chapter 3, there was no programmatic SO<sub>x</sub> exceedance during Compliance Year 2013. In fact, there was a surplus of SO<sub>x</sub> RTCs. Therefore, RECLAIM more than complied with the federally-required SO<sub>x</sub> offset ratio and further quantification of the SO<sub>x</sub> 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). The same BACT guidelines are used to determine applicable BACT to RECLAIM and non-RECLAIM facilities.*

#### 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 operations<sup>1</sup>.

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<sup>1</sup> Federal NSR applies to federal major sources (sources with the potential to emit at least 10 tons of NO<sub>x</sub> or 100 tons of SO<sub>x</sub> per year for the South Coast Air Basin) and state NNI requirements apply to all NO<sub>x</sub> sources and to SO<sub>x</sub> 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<sub>x</sub> or SO<sub>x</sub> emissions, some RECLAIM facilities have actual emissions much less than 4 tons per year).

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 major sources to employ federal BACT/California BARCT at a minimum and, therefore, is eligible for a 1.2-to-1 offset ratio for ozone precursors (*i.e.*, NO<sub>x</sub> and VOC). The federal offset requirement for major SO<sub>2</sub> 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<sub>x</sub> standards, SO<sub>x</sub> is a precursor to PM<sub>10</sub> which is a non-attainment air pollutant in the Basin. The applicable offset ratio for PM<sub>10</sub> is at least 1-to-1, thus, the applicable offset ratio for SO<sub>x</sub> 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<sub>x</sub> and state NNI requirements for both SO<sub>x</sub> and NO<sub>x</sub>. 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, at a minimum, California BACT for all new or modified sources with increases in hourly potential to emit of RECLAIM pollutants. SCAQMD uses the same BACT guidelines in applying BACT to RECLAIM and non-RECLAIM facilities. Furthermore, BACT for major sources is at least as stringent as LAER (LAER is not applicable to minor facilities as defined in Rule 1302(t)). Thus, RECLAIM complies with both 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 all new RECLAIM facilities<sup>2</sup> and all other RECLAIM facilities that increase their annual allocations above the level of their starting allocations plus non-tradable/non-usable credits to provide sufficient RTCs to offset the annual potential emissions increase from new or modified 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 1.2-to-1 offset requirement for NO<sub>x</sub> on an aggregate basis. This annual program audit report assesses NSR permitting activities for Compliance Year 2013 to verify that

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<sup>2</sup> New facilities are facilities that received all District Permits to Construct on or after October 15, 1993.

programmatic compliance of RECLAIM with federal and state NSR requirements has been maintained.

## NSR Activity

Evaluation of NSR data for Compliance Year 2013 shows that RECLAIM facilities were able to expand and modify their operations while complying with NSR requirements. During Compliance Year 2013, a total of 70 NO<sub>x</sub> RECLAIM facilities (39 in Cycle 1 and 31 in Cycle 2) were issued permits to operate, which resulted in a total of 439.7 tons per year of NO<sub>x</sub> emission increases from starting operations of new or modified sources, and 11 SO<sub>x</sub> RECLAIM facilities (six facilities in Cycle 1 and five facilities in Cycle 2) experienced a total of 693.1 tons per year of SO<sub>x</sub> 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<sub>x</sub>: 2,373 tons, SO<sub>x</sub>: 1,132 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 programmatically comply with the federal NSR offset requirements. Meeting the NSR requirement (offset ratio of 1.2-to-1 for NO<sub>x</sub> and at least 1-to-1 for SO<sub>x</sub>) 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<sub>x</sub> and SO<sub>x</sub> offset ratios in the annual program audit report for Compliance Year 2005 and is continuing to do so for NO<sub>x</sub> 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 NO<sub>x</sub> 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 what RACT is for RECLAIM facilities. However, if this very conservative approach should ever fail to demonstrate that the aggregate NO<sub>x</sub> 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 70 RECLAIM facilities resulted in 439.72 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 2013), 2,373 tons of Compliance Year 2013 NOx RTCs remained unused. Therefore, the Compliance Year 2013 NOx programmatic offset ratio calculated from this methodology is 6-to-1 as shown below:

$$\begin{aligned} \text{Offset Ratio} &= \left( 1 + \frac{2,373 \text{ tons}}{439.72 \text{ tons}} \right) \text{-to-1} \\ &= 6\text{-to-1} \end{aligned}$$

RECLAIM continues to generate sufficient excess emission 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 1,132 tons of excess (unused) SOx RTCs for Compliance Year 2013. 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 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 2013 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 NO<sub>x</sub> or SO<sub>x</sub> 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 2013, one RECLAIM facility<sup>3</sup> was subject to this requirement. The facility submitted modeling analysis that showed that its NO<sub>x</sub> emissions complied with the most stringent ambient air quality standards set forth in Rule 2005, Appendix A.

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<sup>3</sup> Under the requirements of Rule 2004(q), Southern California Edison (Facility ID 160437) was required to submit modeling analysis for its NO<sub>x</sub> emissions in Compliance Year 2013.

## CHAPTER 5 COMPLIANCE

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### Summary

*Of the 279 NOx RECLAIM facilities audited during Compliance Year 2013, a total of 271 facilities (97%) complied with their NOx allocations, and 31 of the 33 SOx facilities (94%) complied with their SOx allocations. The eight facilities that exceeded their NOx allocations had aggregate NOx emissions of 173.2 tons and did not have adequate allocations to offset 18.5 tons (or 10.6%) of their combined emissions. This exceedance amount is small compared to the overall allocations for Compliance Year 2013 (0.19% of total NOx allocations). Two SOx facilities had SOx emissions that exceeded their SOx allocations by two pounds in one case and seven pounds in the other case. The exceedances from these facilities did not impact the overall RECLAIM emission reduction goals. Pursuant to Rule 2010(b)(1)(A), these 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 2013 allocations. The overall RECLAIM NOx and SOx emission reduction targets and goals were met for Compliance Year 2013 (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 provide 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 in Rule 2002. For a facility in existence prior to October 1993, it is issued allocations by 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 are issued RTCs generated by converting the surrendered ERCs to RTCs. 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. These reconciliation periods are provided for facilities to review and correct their emission reports as well as securing adequate allocations. Each RECLAIM facility must hold sufficient RTCs in its allocation account to cover (or reconcile with) 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. For Compliance Year 2013, these inspections revealed that some facilities did not obtain or record valid monitoring data, were unable to substantiate reported emissions with valid records, failed to submit emission reports when due, made errors in quantifying their emissions (*e.g.*, arithmetic errors), used incorrect adjustment factors (*e.g.*, bias adjustment factors), used emission calculation methodologies not allowed under the rules, or used MDP inappropriately. Other common mistakes included reporting non-RECLAIM

emissions and/or omitting reportable emissions. Appropriate compliance actions are also taken based on audit findings.

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 nine RECLAIM facilities failed to reconcile their emissions (seven NOx-only facilities, one NOx and SOx facility that only exceeded its SOx allocation, and one facility that exceeded both its NOx and SOx allocations). Eight of these nine facilities (seven NOx-only facilities and the NOx and SOx facility that exceeded both) failed to secure sufficient RTCs to cover their reported emissions during either the quarterly or annual reconciliation periods (*i.e.*, they failed to hold sufficient RTCs to cover their reported emissions, as opposed to facilities that have exceedances because they under-reported their emissions and held sufficient RTCs to reconcile their reported emissions but not enough to reconcile their audited emissions). Of these eight facilities, one facility (a NOx-only facility), had an additional reason for NOx exceedance in that they used an incorrect pressure correction factor to correct fuel usage readings to standard conditions. At a different facility, an additional reason for NOx exceedance was that the facility omitted reportable emissions. In the one remaining case, the facility failed to account for SOx emissions from a diesel-fired IC engine. Overall, the Compliance Year 2013 allocation compliance rates for facilities are 97% (271 out of 279 facilities) for NOx RECLAIM and 94% (31 out of 33 facilities) for SOx RECLAIM. For purposes of comparison, the allocation compliance rates for Compliance Year 2012 were 95% and 97% for NOx and SOx RECLAIM facilities, respectively. The eight facilities that had NOx emissions in excess of their individual NOx allocations had 173.2 tons of NOx emissions and did not have adequate RTCs to cover 18.5 of those tons (or 10.6%). This exceedance amount (0.19% of aggregate NOx allocations) is small compared to the overall allocations for Compliance Year 2013. Two facilities had SOx emissions that exceeded its SOx allocations by only two pounds in one case and seven pounds in the other case. Pursuant to Rule 2010(b)(1)(A), all nine 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 2013 allocations.

### **Impact of Missing Data Procedures**

MDP was designed to provide a method for determining emissions when an emission monitoring system does not 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 Emissions 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”<sup>1</sup> scenario. For instance, an MDP “worst case” scenario may occur for 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 emissions<sup>2</sup>.

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, 107 NO<sub>x</sub> facilities and 15 SO<sub>x</sub> facilities used MDP in reporting portions of their annual emissions during Compliance Year 2013. In terms of mass emissions, 3.9% of the total reported NO<sub>x</sub> emissions and 5.6% of the total reported SO<sub>x</sub> emissions in the APEP reports were calculated using MDP for Compliance Year 2013. Table 5-1 compares the impact of MDP on reported annual emissions for the last few compliance years to the second compliance year, 1995 (MDP was not fully implemented during Compliance Year 1994).

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<sup>1</sup> Based on uncontrolled emission factor at maximum rated capacity of the source and 24 hours per day.

<sup>2</sup> 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 <sup>*</sup>	
	NOx	SOx
1995	23.0% (65 / 6,070)	40.0% (12 / 3,403)
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)
2013	3.9% (107 / 287)	5.6% (15 / 113)

\* 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, 107 facilities reported NOx emissions using MDP in Compliance Year 2013. Even though the number of facilities is higher than in 1995, the percentage of emissions reported using MDP during Compliance Year 2013 is much lower than it was in 1995 (3.9% compared to 23%). Additionally, in terms of quantity, NOx emissions in Compliance Year 2013 were about 5% of those in Compliance Year 1995 (287 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 4% of reported NO<sub>x</sub> annual emissions were calculated using MDP in Compliance Year 2013. 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 4% 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 2013, a majority of NO<sub>x</sub> MDP emissions data (55%) and SO<sub>x</sub> MDP emissions data (93%) 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. On the other hand, as discussed in Chapter 7, a power plant was about two months late in conducting a RATA, resulting in application of MDP for the period from the due date until the date of the RATA. A more conservative tier of MDP was required to be used due to the length of the missing period. As such, this power plant's reported emissions are likely significantly over-estimated emissions.

## Emissions Monitoring

### Overview

The reproducibility of reported RECLAIM facility emissions (and the underlying calculations)—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 NO<sub>x</sub> sources into major sources, large sources, process units, and equipment exempt from obtaining a written permit pursuant to Rule 219. All SO<sub>x</sub> 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 Emissions Monitoring System (CEMS)	Fuel Meter or Continuous Process Monitoring System (CPMS)	Fuel Meter, Timer, or CPMS
Reporting Frequency	Daily	Monthly	Quarterly

### **Continuous Emissions 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 NOx and SOx. 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.

ACEMS are alternatives to CEMS that are allowed under the RECLAIM regulation. These are devices that do not directly monitor NOx or SOx 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 SCAQMD to be equivalent to CEMS in relative accuracy, reliability, reproducibility, and timeliness

Even though the number of major sources monitored by either CEMS or Alternative Continuous Emissions Monitoring Systems (ACEMS) represent 19% and 60% of all permitted RECLAIM NOx and SOx sources, respectively, reported emissions for Compliance Year 2013 revealed that 79% of all RECLAIM NOx emissions and 97% of all RECLAIM SOx emissions were determined by CEMS or ACEMS.

#### **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 SCAQMD's 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: The relative accuracy of the CEMS results relative to the reference method results must be within  $\pm 20\%$  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 2013 and 2014 calendar years' passing rates for RATAs of certified CEMS for NOx and SOx concentration, total sulfur in fuel gas concentrations, stack flow rate (in-stack monitors and F-factor based calculations), and NOx and SOx mass emissions. However, the tables do not include SOx 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 2013**

Concentration						Stack Flow Rate				Mass Emissions			
NOx		SO <sub>2</sub>		Total <sup>1</sup> Sulfur		In-Stack Monitor		F-Factor Based Calc.		NOx		SOx <sup>2</sup>	
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

<sup>1</sup> Includes Cylinder Gas Audit (CGA) tests.

<sup>2</sup> Does not include SOx emissions calculated from total sulfur analyzers.

**Table 5-4**  
**Passing Rates Based on RATAs of Certified CEMS in 2014<sup>1</sup>**

Concentration						Stack Flow Rate				Mass Emissions			
NOx		SO <sub>2</sub>		Total <sup>2</sup> Sulfur		In-Stack Monitor		F-Factor Based Calc.		NOx		SOx <sup>3</sup>	
No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass
351	100	83	100	13	100	47	100	390	100	351	100	46	100

<sup>1</sup> All passing rates calculated from data submitted before January 16, 2015 and may exclude some data from the fourth quarter of calendar year 2014.

<sup>2</sup> Includes Cylinder Gas Audit (CGA) tests.

<sup>3</sup> Does not include SOx emissions calculated from total sulfur analyzers.

As indicated in Tables 5-3 and 5-4, the passing rates for NO<sub>x</sub>/SO<sub>2</sub> 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 2013 and 2014 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 (approximately two percent of calendar year 2013 and approximately two percent of calendar year 2014 RATA results were submitted in paper form rather than electronically).

### **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 uses 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 SCAQMD's 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 on a daily basis without human intervention.
- 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 SCAQMD's 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 SCAQMD's 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.

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 upgrade or replace the current Central Station. SCAQMD will initiate a Working Group of all interested and pertinent parties in 2015 to start discussions on alternatives to electronic reporting via modem. Key factors that need to be considered include ease of implementation and cost impacts on RECLAIM facilities and SCAQMD. Any proposed alternative must be broadly applicable, be capable to support automatic daily transmission of reports without any human intervention, and allow adequate time for testing and implementation. Progress on this effort will be presented in future annual program audit reports.

## CHAPTER 6 REPORTED JOB IMPACTS

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### 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. Additional benefits to the local economy (e.g., generating jobs for consulting firms, source testing firms and CEMS vendors) attributable to the RECLAIM program, as well as factors outside of RECLAIM (e.g., the prevailing economic climate), impact the job market. However, these factors are not evaluated in this report. Also, job losses and job gains are strictly based on RECLAIM facilities' reported information. SCAQMD staff is not able to independently verify the accuracy of the reported job impact information.*

*According to the Compliance Year 2013 employment survey data gathered from APEP reports, RECLAIM facilities reported a net gain of 4,180 jobs, representing 4.01% of their total employment. Two facilities reported a gain of one job each due to RECLAIM while one facility reported a loss of four jobs due to RECLAIM. None of the four RECLAIM facilities that shut down during Compliance Year 2013 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 the number of jobs at the beginning of Compliance Year 2013 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 2013 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 2013. 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 2013 and clarifying information collected by SCAQMD staff. SCAQMD staff is not able to verify the accuracy of the reported job impact information.

## Job Impacts

Table 6-1 summarizes job impact data gathered from Compliance Year 2013 APEP reports and follow-up contacts with facilities. A total of 121 facilities reported 12,003 job gains, while 141 facilities reported a total of 7,823 job losses. Net job gains were reported in two of the three categories: sales of products (39), and non-manufacturing (5,509), whereas net job losses were reported in the remaining category: manufacturing (1,368). Table 6-1 shows a total net gain of 4,180 jobs, which represents a net jobs increase of 4.01% at RECLAIM facilities during Compliance Year 2013.

**Table 6-1**  
**Job Impacts at RECLAIM Facilities for Compliance Year 2013**

Description	Manufacture	Sales of Products	Non-Manufacture	Total <sup>1</sup>
Initial Jobs	37,737	930	65,650	104,317
Overall Job Gain	1,834	185	9,984	12,003
Overall Job Loss	3,202	146	4,475	7,823
Final Jobs	36,369	969	71,159	108,497
Net Job Change	-1,368	39	5,509	4,180
Percent (%) Job Change	-3.63%	4.19%	8.39%	4.01%
Facilities Reporting Job Gains	83	26	69	121
Facilities Reporting Job Losses	102	35	90	141

<sup>1</sup> 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 four RECLAIM facilities that were reported to be shut down or ceasing operations in Compliance Year 2013 as listed in Appendix C. One of the shut down facilities had all equipment removed from the site and the property was sold for development as a warehouse/distribution center. The second facility shut down because of declining demand for its products, while the third facility was shut down because the cost of manufacturing, production, or raw materials was too high. Lastly, the fourth facility was shut down because it had filed for bankruptcy. These shutdowns led to a loss of 9 manufacturing jobs and 130 non-manufacturing jobs. However, none of these losses was attributed to RECLAIM in Compliance Year 2013 (refer to Appendix E).

Of the RECLAIM facilities in operation, only three attributed job gains or losses to RECLAIM for Compliance Year 2013. One facility reported a loss of four jobs due to increasing costs of RECLAIM. Two facilities reported a gain of one job each: One hired a CEMS technician, while the other hired a person to help with the MRR requirements of the RECLAIM Program.

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 for these facilities. 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

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#### Summary

*Audited RECLAIM emissions have been in an overall downward trend since the program's inception. Compliance Year 2013 NOx emissions decreased 4.8% relative to Compliance Year 2012 and Compliance Year 2013 SOx emissions were 19.0% less than the previous year. Quarterly calendar year 2013 NOx emissions fluctuated within 18 percent of the mean NOx emissions for the year. Quarterly calendar year 2013 SOx emissions fluctuated within 16 percent of the year's mean SOx emissions. There was no significant shift in seasonal emissions from the winter season to the summer season for either pollutant.*

*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 2014, 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 and/or Rule 1401.1). 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 emissions reports are used to identify candidates for the Toxics Hot Spots program (AB2588). This program requires emission inventories and depending on the type and amount of emissions, facilities may be required to do public notice and/or prepare and implement a plan to reduce emissions. There is no evidence that RECLAIM has caused or allowed higher toxic risk in areas adjacent to RECLAIM facilities.*

#### Background

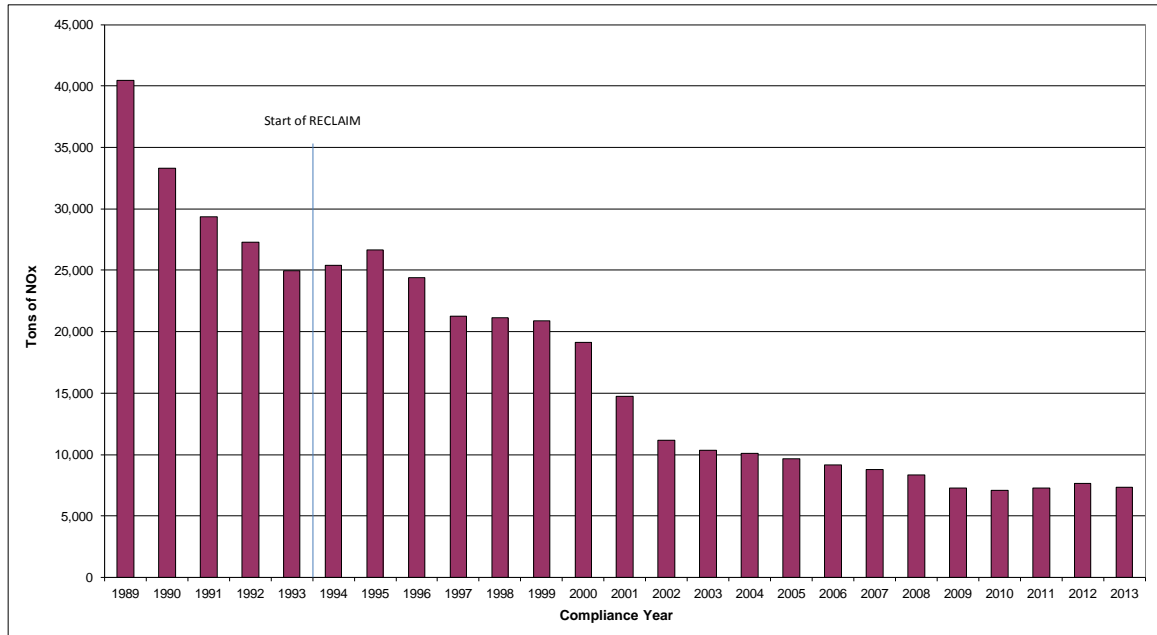
RECLAIM is designed to achieve the same, or higher level of, air quality and public health benefits as would have been achieved from implementation of the control measures and command-and-control rules that RECLAIM subsumed. Therefore, as a part of each annual program audit, SCAQMD staff evaluates per capita exposure to air pollution, toxic risk reductions, emission trends, and seasonal fluctuations in emissions. SCAQMD staff also generates quarterly emissions maps depicting the geographic distribution of RECLAIM emissions. These maps are generated and posted quarterly on SCAQMD's webpage (<http://www.aqmd.gov/home/programs/business/about-reclaim/quarterly-emission-maps>), 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

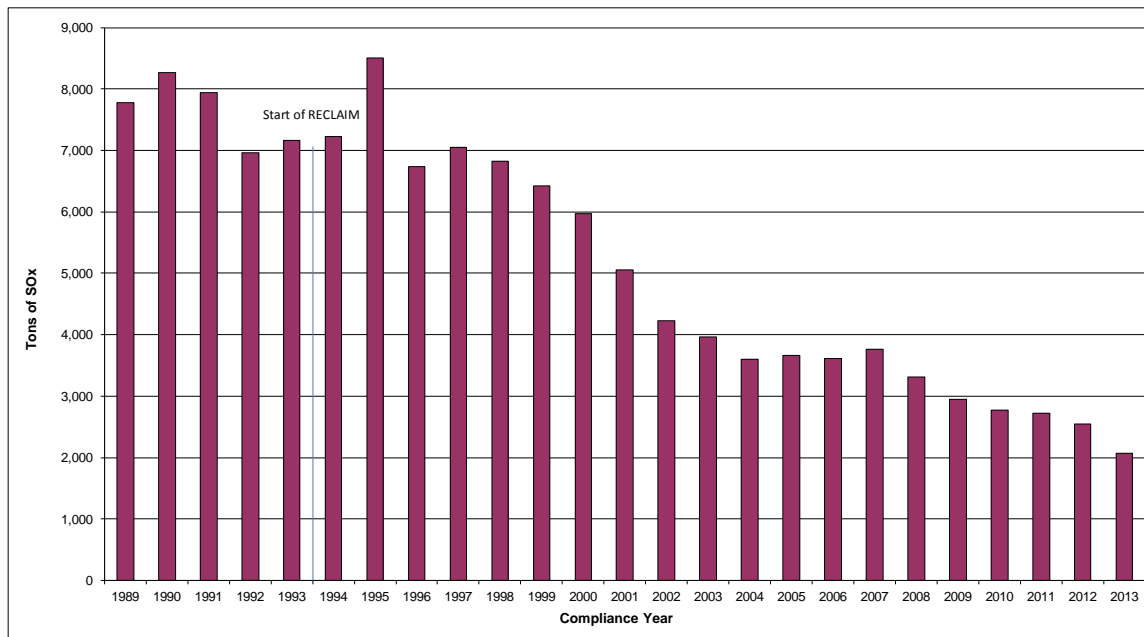
Concerns were expressed during program development that RECLAIM might cause sources to increase their aggregate emissions during the early years of the program due to perceived over-allocation of emissions. As depicted in Figures 7-1 and 7-2, which show NOx and SOx emissions from RECLAIM sources since 1989, the analysis of emissions from RECLAIM sources indicates that overall, RECLAIM emissions have been in a downward trend since program inception and the emission increases during early years of RECLAIM that were anticipated by some 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 and 2012, NOx emissions increased slightly but were still much lower than the programmatic goal as shown in Table 3-2 and Figure 3-1. NOx emissions in Compliance Year 2013 decreased when compared to Compliance Year 2012 and returned to levels comparable to Compliance Years 2009 and 2011. 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 2013.

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 early years of the program.



## Seasonal Fluctuation in Emissions for RECLAIM Sources

Another concern during program development was that RECLAIM might cause facilities to shift emissions from the winter season into the summer ozone season and exacerbate poor summer air quality since RECLAIM emission goals are structured on an annual basis. To address this concern, “seasonal fluctuations” were added as part of the analysis required by Rule 2015. 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 2013 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 2013 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 through 7-6.<sup>1</sup>

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:

- NOx emissions from RECLAIM facilities are dominated by refineries and power plants.
- SOx 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 (NOx and SOx) and from power plants (NOx) are typically higher in the summer months, which was the trend prior to implementation of RECLAIM for the reasons described above. 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.

Figure 7-3 shows the 2013 mean quarterly NOx emission level, which is the average of the four quarterly aggregate emissions, and the 2013 audited quarterly emissions. It shows that first quarter NOx emissions were 10 percent below the mean quarterly NOx emission level and second quarter NOx emissions were 18 percent above the mean quarterly NOx emission level. This shows that

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<sup>1</sup> 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 did not peak in summer quarterly emissions in 2013. However, as shown in Figure 7-4, calendar year quarterly emission profile is not consistent with the corresponding profiles for prior years and, therefore, warrants further analysis.

**Figure 7-3**  
**Calendar Year 2013 NOx Quarterly Emissions**

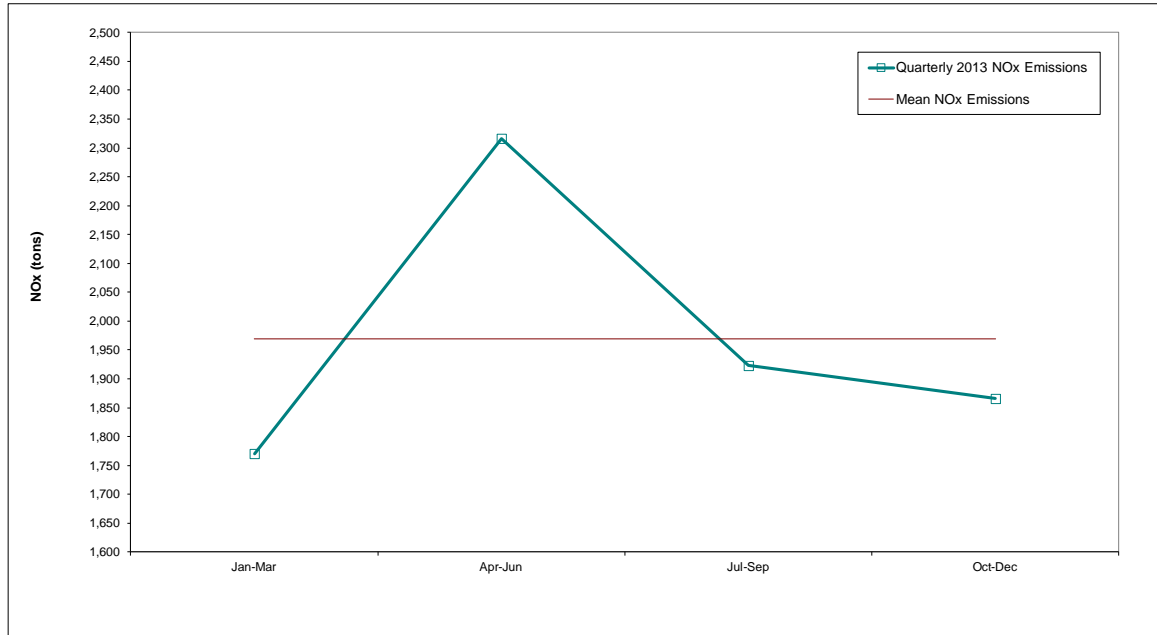
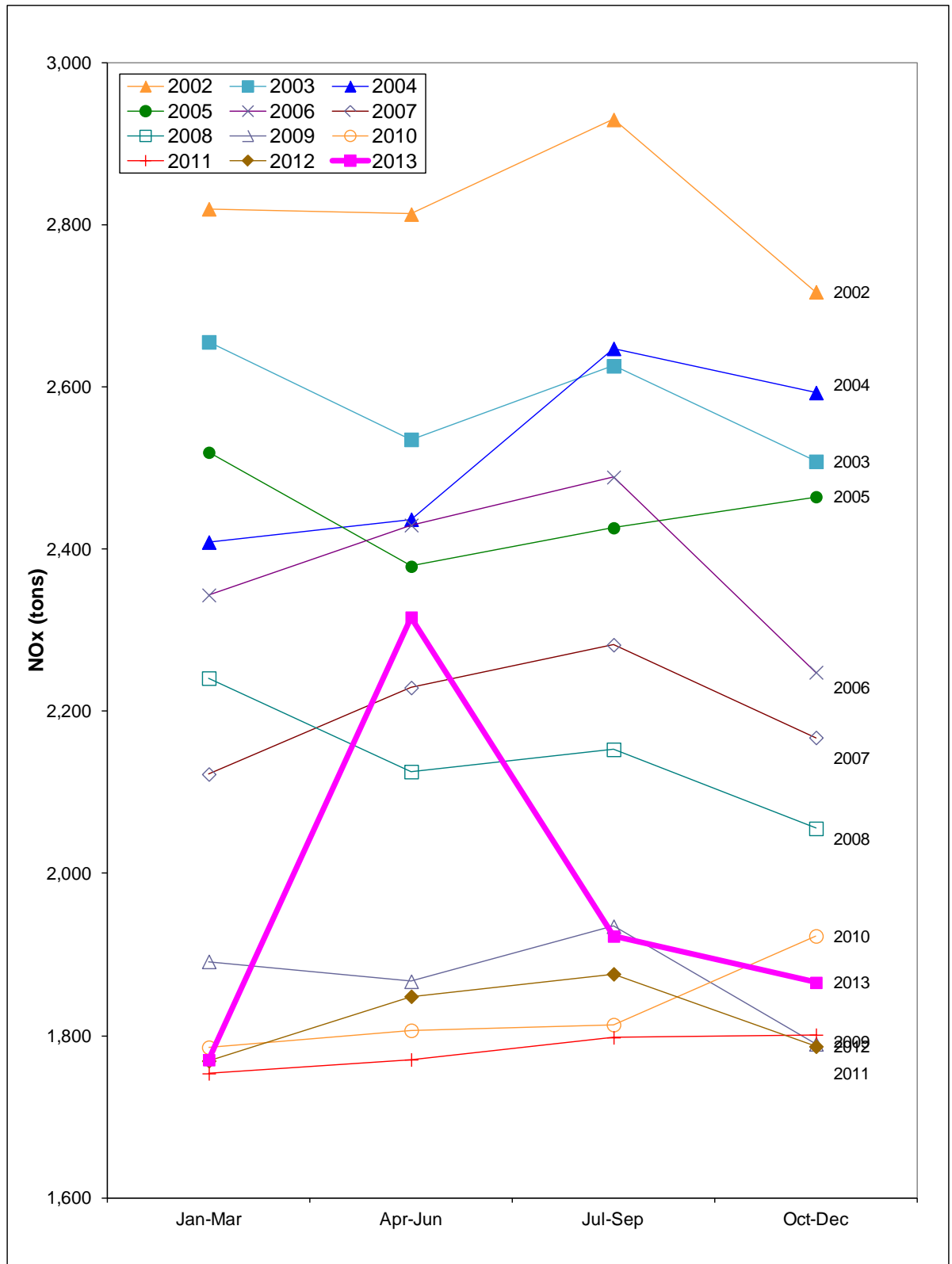


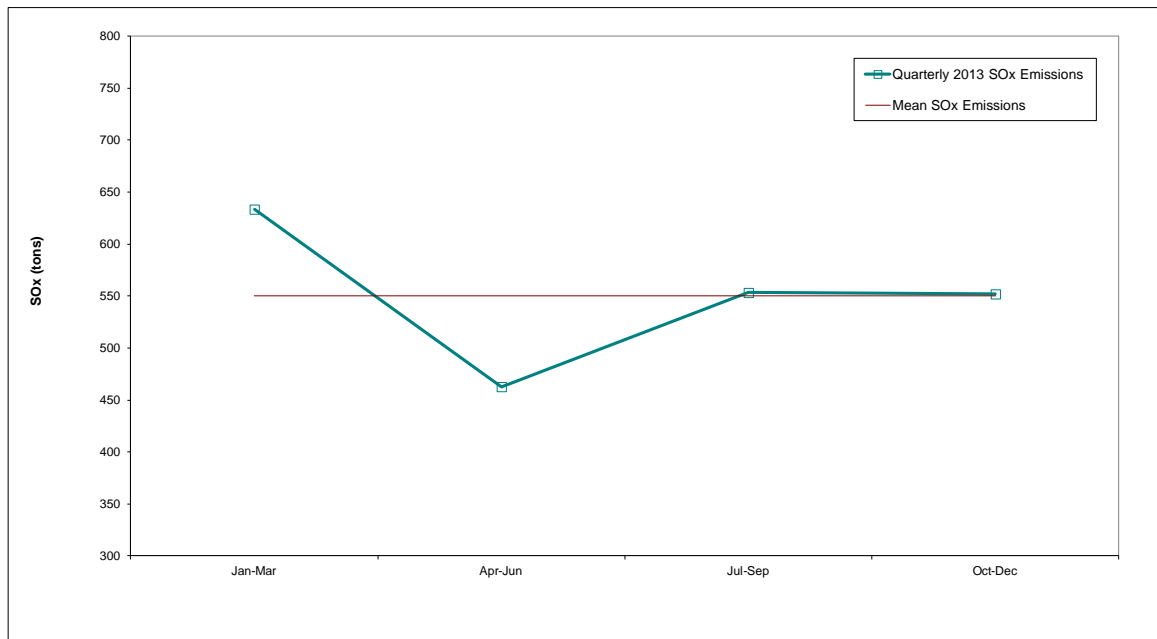
Figure 7-4 compares the 2013 quarterly NOx emissions with the quarterly emissions from 2002 through 2012. Figures 7-3 and 7-4 both point to a relatively high emission level in the second quarter. Further investigation reveals that the increase in NOx emissions in the second quarter can be attributed to two facilities reporting their emissions using MDP. One facility failed to conduct a RATA by the required due date, resulting in the application of MDP for more than two months until the test was conducted and passed. The second facility is a refinery that applied MDP for an extended period because a CEMS component failed and locating a replacement was difficult. In both cases, the durations of the missing data periods required the application of more conservative tiers of MDP. As such, the resulting reported emissions based on MDP were significantly elevated relative to these facilities' typical emissions. Thus, the peak in RECLAIM NOx emissions during the second quarter of calendar year 2013 illustrated in Figures 7-3 and 7-4 is reflective of the application of conservative MDP rather than an actual shift in emissions. Furthermore, this peak is not during summer months. As such, the calendar year 2013 NOx emissions data do not suggest a shift in emissions to the summer ozone season.

**Figure 7-4**  
**Quarterly NOx Emissions from Calendar Years 2002 through 2013**



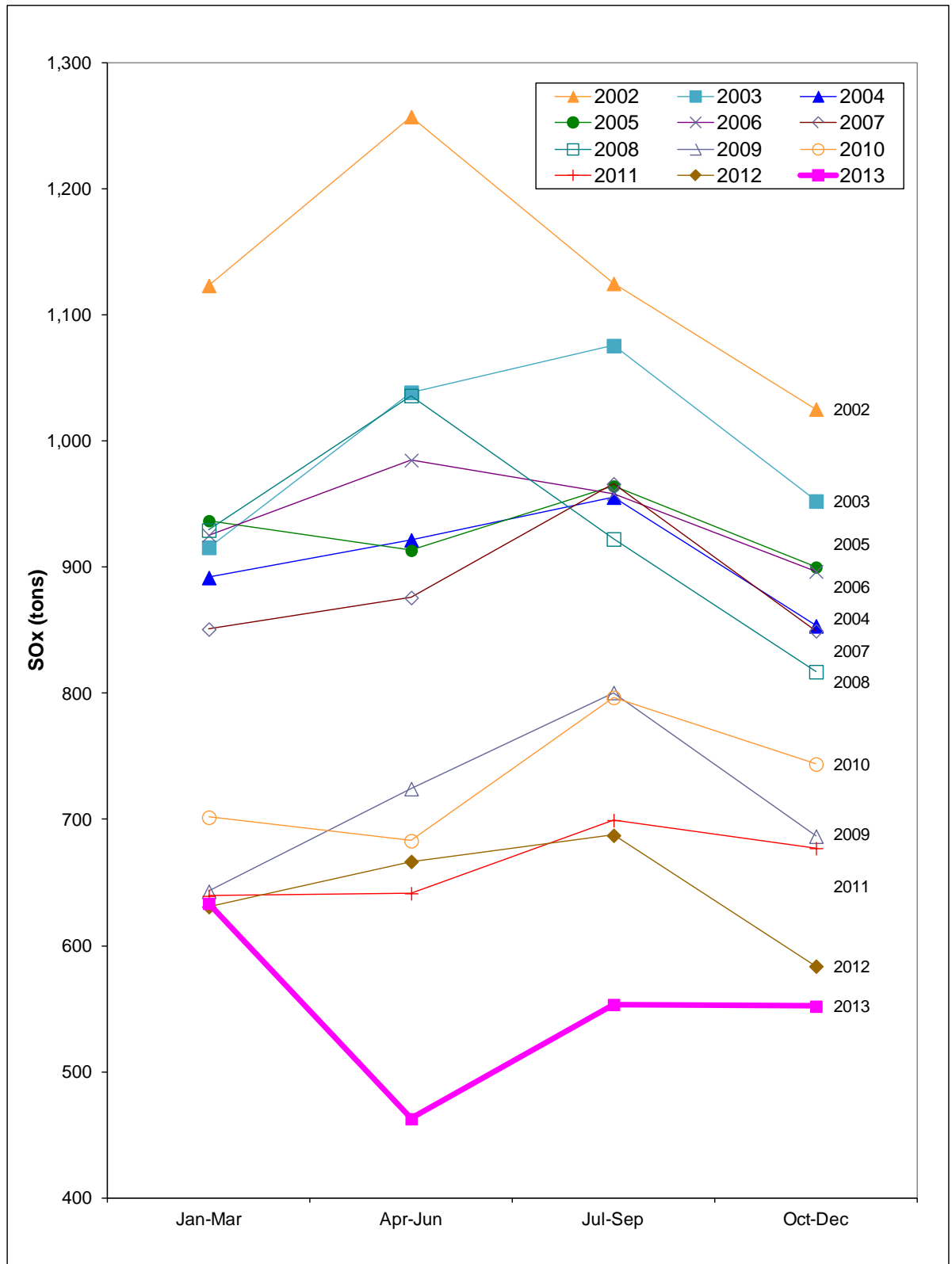
Similar to Figure 7-3 and 7-4 for NOx quarterly emissions, Figure 7-5 presents the 2013 mean quarterly SOx emissions and the 2013 audited quarterly emissions, and Figure 7-6 compares the 2013 quarterly SOx emissions with the quarterly emissions from 2002 through 2012. Figure 7-5 shows that quarterly SOx emissions during calendar year 2013 varied from fifteen percent above the mean in the first quarter (January through March) to sixteen percent below the mean in the second quarter (April through June) while quarterly SOx emissions during the third and fourth quarters (July through December) were both very close to the mean. Again this demonstrates that emissions did not peak in the summer ozone season in 2013. However, as shown in Figure 7-6, the quarterly emission profile is not consistent with prior years and also warrants further analysis.

**Figure 7-5**  
**Calendar Year 2013 SOx Quarterly Emissions**



Both Figures 7-5 and 7-6 point to an elevated emission level in the first quarter, and Figure 7-5 shows second quarter emissions well below the mean. Further investigation reveals that the increase in SOx emissions in the first quarter is the result of higher than normal SOx emissions at a refinery while it came out of a turnaround during the quarter. As with the second-quarter peak in aggregate NOx emissions, the first quarter SOx peak did not occur during the summer season. Furthermore, it is not the result of a temporal shift in production. The low second quarter aggregate SOx emissions are attributable to a calciner turnaround. Specifically, the calciner did not operate—and therefore did not emit—for a couple of months during the quarter. This analysis shows that the quarterly SOx emissions data is not suggestive of a seasonal shift in production enabled by the RECLAIM market.

**Figure 7-6**  
**Quarterly SOx Emissions from Calendar Years 2002 through 2013**



## 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 2014 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 1-hour state and 8-hour federal ambient ozone standards in calendar year 2014 were the lowest since calendar year 2001. However, the number of days that exceeded the 8-hour state standard increased by 11 days when compared to Calendar Year 2013, which was the lowest since 2001. The Basin's maximum ozone concentrations were at or very close to the lowest levels since 2001, based on both the 1-hour and 8-hour averaging periods.

**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
2014	76	134	93	0.142	0.114

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”<sup>2</sup>) 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. For calendar year 2014, the actual per capita exposure for the Basin was 1.8 hours, which represents a 98% reduction from the 1986-88 baseline level.

<sup>2</sup> 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 <sup>1</sup>	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
2014 actual	1.837	1.263	0.293	1.472	6.022
1997 target <sup>2</sup>	48.3	45.5	16.3	56.5	115.6
2000 target <sup>3</sup>	40.2	37.9	13.6	47	96.3

<sup>1</sup> Average over three years, 1986 through 1988.

<sup>2</sup> 60% of the 1986-88 baseline exposures.

<sup>3</sup> 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 wholly 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 as are 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<sub>x</sub> or SO<sub>x</sub> emission increases are also required to be equipped with BACT, which minimizes to the best extent feasible NO<sub>x</sub> and SO<sub>x</sub> emissions.

Under the AER program, facilities that have the potential to emit: 1) four tons per year or more of VOC, NO<sub>x</sub>, SO<sub>x</sub>, 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 SCAQMD. Beginning with the FY 2000-01 reporting cycle, toxics emission reporting for the AB2588 Program was incorporated into 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/home/regulations/compliance/toxic-hot-spots-ab-2588>) 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 June 2014, SCAQMD staff has reviewed and approved 311 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 to issue public notices informing the community. A public meeting is held at which SCAQMD discusses their health risk. To date, SCAQMD has conducted 50 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 SCAQMD's 2013 Annual Report on AB 2588 Air Toxics "Hot Spots" program<sup>3</sup>, 22 facilities were required to

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<sup>3</sup> Data and descriptions about the AB2588 Program were taken from SCAQMD's June 2014 Annual Report on AB 2588 Air Toxics "Hot Spots" Program. [http://www.aqmd.gov/docs/default-source/planning/risk-assessment/annual\\_report\\_2013.pdf](http://www.aqmd.gov/docs/default-source/planning/risk-assessment/annual_report_2013.pdf)

reduce risks and all of these facilities have reduced risks well below the action risk levels mandated by Rule 1402.

Finally, 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 fourth version of MATES (*i.e.*, MATES IV) was conducted over a one year period from July 2012 to June 2013. Monitoring conducted at that time indicated that the basin-wide population-weighted air toxics exposure was reduced by 57 percent since MATES III (conducted from April 2004 to March 2006). The Draft Report for MATES IV was released for the 90-day public review period on October 3, 2014.

There have been concerns voiced raised 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. Other SCAQMD rules and programs for toxic air contaminants apply to facilities regardless of them being in RECLAIM or under traditional command and control rules. Emission increases at permit units are subject to new source review. RECLAIM facilities must also comply with any applicable Regulation XIV rule for toxics. Permits generally include limiting throughput conditions for new source review or applicable source specific rules. AB2588 and/or Rule 1402 could also be triggered and the appropriate risk reduction measures would be required for any facility with emissions of toxic air contaminants that would trigger these requirements.

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<sub>x</sub> and SO<sub>x</sub> 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.

## APPENDIX A

### RECLAIM UNIVERSE OF SOURCES

The RECLAIM universe of active sources as of the end of Compliance Year 2013 is provided below.

Facility ID	Cycle	Facility Name	Program
800088	2	3M COMPANY	NOx
23752	2	AEROCRAFT HEAT TREATING CO INC	NOx
175124	1	AEROJET ROCKETDYNE OF DE, INC.	NOx
115394	1	AES ALAMITOS, LLC	NOx
115389	2	AES HUNTINGTON BEACH, LLC	NOx/SOx
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 LLC., (LA BREWERY)	NOx/SOx
117140	2	AOC, LLC	NOx
124619	1	ARDAGH METAL PACKAGING USA INC.	NOx
167066	1	ARLON GRAPHICS L.L.C.	NOx
174406	1	ARLON GRAPHICS LLC	NOx
12155	1	ARMSTRONG WORLD INDUSTRIES INC	NOx
122666	2	A'S MATCH DYEING & FINISHING	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

**ANNUAL RECLAIM AUDIT**

Facility ID	Cycle	Facility Name	Program
166073	1	BETA OFFSHORE	NOx
155474	2	BICENT (CALIFORNIA) MALBURG LLC	Nox
132068	1	BIMBO BAKERIES USA INC	NOx
1073	1	BORAL ROOFING LLC	NOx
174544	2	BREITBURN OPERATING 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
14944	1	CENTRAL WIRE, INC.	NOx/SOx
42676	2	CES PLACERITA INC	NOx
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
38440	2	COOPER & BRAIN - BREA	NOx
68042	2	CORONA ENERGY PARTNERS, LTD	NOx
152707	1	CPV SENTINEL LLC	NOx

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Facility ID	Cycle	Facility Name	Program
50098	1	D&D DISPOSAL INC,WEST COAST RENDERING CO	NOx
63180	1	DARLING INTERNATIONAL INC	NOx
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
175154	2	FREEMPORT-MCMORAN OIL & GAS	NOx
175191	1	FREEMPORT-MCMORAN OIL & GAS	NOx
346	1	FRITO-LAY, INC.	NOx
2418	2	FRUIT GROWERS SUPPLY CO	NOx
142267	2	FS PRECISION TECH LLC	NOx
5814	1	GAINEY CERAMICS INC	NOx
153033	2	GEORGIA-PACIFIC CORRUGATED LLC	NOx
176934	1	GI TC IMPERIAL HIGHWAY, LLC	NOx
124723	1	GREKA OIL & GAS, INC	NOx
137471	2	GRIFOLS BIOLOGICALS INC	NOx
156741	2	HARBOR COGENERATION CO, LLC	NOx

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Facility ID	Cycle	Facility Name	Program
157359	1	HENKEL ELECTRONIC MATERIALS, LLC	NOx
123774	1	HERAEUS PRECIOUS METALS NO. AMERICA, LLC	NOx
113160	2	HILTON COSTA MESA	NOx
800066	1	HITCO CARBON COMPOSITES INC	NOx
2912	2	HOLLIDAY ROCK CO INC	NOx
800003	2	HONEYWELL INTERNATIONAL 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
90957	2	J PACIFIC INC, DELTA DYEING & FINISHING	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
36909	2	LA CITY, DEPARTMENT OF AIRPORTS	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 OPERATING INC	NOx
151532	2	LINN OPERATING, INC	NOx
152054	1	LINN WESTERN OPERATING INC	NOx
151415	2	LINN WESTERN OPERATING, INC	NOx
115314	2	LONG BEACH GENERATION, 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

**ANNUAL RECLAIM AUDIT**

Facility ID	Cycle	Facility Name	Program
14049	2	MARUCHAN INC	NOx
3029	2	MATCHMASTER DYEING & FINISHING INC	NOx
2825	1	MCP FOODS INC	NOx
173290	1	MEDICLEAN	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
115563	1	NCI GROUP INC., DBA, METAL COATERS OF CA	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
115315	1	NRG CALIFORNIA SOUTH LP, ETIWANDA GEN ST	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 COMPANY/LOS ANGELES REFINERY	NOx/SOx
137520	1	PLAINS WEST COAST TERMINALS LLC	NOx
800416	1	PLAINS WEST COAST TERMINALS LLC	NOx

**ANNUAL RECLAIM AUDIT**

Facility ID	Cycle	Facility Name	Program
800417	2	PLAINS WEST COAST TERMINALS LLC	NOx
800419	2	PLAINS WEST COAST TERMINALS LLC	NOx
800420	2	PLAINS WEST COAST TERMINALS LLC	NOx
176708	2	POMONA POWER GENERATION LLC	NOx
11435	2	PQ CORPORATION	NOx/SOx
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
20203	2	RECYCLE TO CONSERVE INC.	NOx
15544	2	REICHHOLD INC	NOx
52517	1	REXAM BEVERAGE CAN COMPANY	NOx
61722	2	RICOH ELECTRONICS INC	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
14926	1	SEMPRA ENERGY (THE GAS CO)	NOx
800129	1	SFPP, L.P.	NOx
37603	1	SGL TECHNIC INC, POLYCARBON DIVISION	NOx
131850	2	SHAW DIVERSIFIED SERVICES INC	NOx



**ANNUAL RECLAIM AUDIT**

Facility ID	Cycle	Facility Name	Program
117227	2	SHCI SM BCH HOTEL LLC, LOEWS SM BCH HOTE	NOx
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
114801	1	SOLVAY USA, INC.	NOx/SOx
14871	2	SONOCO PRODUCTS CO	NOx
160437	1	SOUTHERN CALIFORNIA EDISON	NOx
800338	2	SPECIALTY PAPER MILLS INC	NOx
1634	2	STEELCASE INC, WESTERN DIV	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/SOx
174591	1	TESORO REF & MKTG CO LLC,CALCINER	NOX/SOx
174655	2	TESORO REFINING & MARKETING CO, LLC	NOX/SOx
151798	1	TESORO REFINING AND MARKETING CO, LLC	NOx/SOx
800436	1	TESORO REFINING AND MARKETING CO, LLC	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
115241	1	THE BOEING COMPANY	NOx
800067	1	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

**ANNUAL RECLAIM AUDIT**

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Facility ID	Cycle	Facility Name	Program
62548	2	THE NEWARK GROUP, INC.	NOx
97081	1	THE TERMO COMPANY	NOx
800330	1	THUMS LONG BEACH	NOx
129497	1	THUMS LONG BEACH CO	NOx
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
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
800393	1	VALERO WILMINGTON ASPHALT PLANT	NOx
9053	1	VEOLIA ENERGY LOS ANGELES, INC	NOx
11034	2	VEOLIA ENERGY LOS ANGELES, INC	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, LLC	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

## APPENDIX B

### FACILITY INCLUSIONS

As discussed in Chapter 1, six facilities were added to the RECLAIM universe in Compliance Year 2013. The included facilities are identified, and the reasons for inclusion are also provided.

Facility ID	Cycle	Facility Name	Market	Date	Reason
1634	2	STEELCASE INC, WESTERN DIV	NOx	7/1/2013	Reactivation of a previously shut down facility
36909	2	LA CITY, DEPARTMENT OF AIRPORTS	NOx	7/1/2013	Reported emissions from permitted sources exceeded four tons of NOx in a year
90957	2	J PACIFIC INC, DELTA DYEING & FINISHING	NOx	9/10/2013	Reported emissions from permitted sources exceeded four tons of NOx in a year
122666	2	A'S MATCH DYEING & FINISHING	NOx	9/10/2013	Reported emissions from permitted sources exceeded four tons of NOx in a year
174406	1	ARLON GRAPHICS LLC	NOx	9/11/2013	Partial relocation of an existing facility
800129	1	SFPP	NOx	4/1/2013	Opt-in at facility's request

One facility was added to the SOx market, but this inclusion did not affect the number of facilities in the entire RECLAIM universe because it formerly participated in the NOx-only market. The data presented below is associated with the entry of this facility into the SOx market.

Facility ID	Cycle	Facility Name	Market	Date	Reason
18391	2	TAMCO	NOx/SOx	12/4/2013	Reported emissions from permitted sources exceeded four tons of SOx in a year

## APPENDIX C

### RECLAIM FACILITIES CEASING OPERATION OR EXCLUDED

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SCAQMD staff is aware of the following RECLAIM facilities that permanently shut down all operations, inactivated all their RECLAIM permits, or were excluded from the RECLAIM universe during Compliance Year 2013. 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 16737  
Facility Name Atkinson Brick Co  
City and County Huntington Beach, Orange County  
SIC 3259  
Pollutant(s) NOx  
1994 Allocation 25,870  
Reason for Shutdown All equipment removed from site and property sold for development as a warehouse/distribution center.

Facility ID 152857  
Facility Name Georgia-Pacific Gypsum LLC  
City and County Long Beach, Los Angeles County  
SIC 3275  
Pollutant(s) NOx  
1994 Allocation 95,914  
Reason for Shutdown Declining demand for products.

Facility ID 158950  
Facility Name Windsor Quality Food Co. Ltd  
City and County Riverside, Riverside County  
SIC 5142  
Pollutant(s) NOx  
1994 Allocation 8,066  
Reason for Shutdown High cost of manufacturing, production, or raw material.

Facility ID 800210  
Facility Name Conexant Systems Inc  
City and County Newport Beach, Orange County  
SIC 3674  
Pollutant(s) NOx  
1994 Allocation 12,496  
Reason for Shutdown The facility claimed that it had been consolidated to another ID within SCAQMD. However, the facility had closed down and filed for bankruptcy, and its permits had expired; the facility that took over the property did not obtain any permits through the change of operator process.

**APPENDIX D**  
**FACILITIES THAT EXCEEDED THEIR ANNUAL ALLOCATION**  
**FOR COMPLIANCE YEAR 2013**

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The following is a list of facilities that did not have enough RTCs to cover their NOx and/or SOx emissions in Compliance Year 2013 based on the results of audits conducted by SCAQMD staff.

Facility ID	Facility Name	Compliance Year	Emittant
1073	BORAL ROOFING LLC	2013	NOx
18931	TAMCO	2013	NOx
19390	SULLY-MILLER CONTRACTING CO.	2013	NOx
122666	A'S MATCH DYEING & FINISHING	2013	NOx
133996	PLAINS EXPLORATION & PRODUCTION CO	2013	NOx
145836	AMERICAN APPAREL DYEING & FINISHING, INC	2013	NOx
153199	THE KROGER CO/RALPHS GROCERY CO	2013	NOx
800182	RIVERSIDE CEMENT CO	2013	NOx & SOx
800373	LAKELAND DEVELOPMENT CO	2013	SOx

## APPENDIX E

### REPORTED JOB IMPACTS ATTRIBUTED TO RECLAIM

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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 2013, three facilities reported actual job gains or losses attributable to RECLAIM.

#### Facilities with reported job gains or losses attributed to RECLAIM:

Facility ID	115536
Facility Name	AES Redondo Beach, LLC
City and County	Redondo Beach, Los Angeles County
SIC	4911
Pollutant(s)	NOx
Cycle	1
Job Gain	1
Job Loss	0
Comments	The facility hired an additional Continuous Emissions and Monitoring Systems (CEMS) technician to ensure proper operation of the CEMS at the site.
Facility ID	141295
Facility Name	Lekos Dye and Finishing, Inc
City and County	Compton, Los Angeles County
SIC	2269
Pollutant(s)	NOx
Cycle	2
Job Gain	0
Job Loss	4
Comments	The facility stated that the cost of RECLAIM was too large to bear and that expense cutting such as employee reduction had to be made.
Facility ID	800074
Facility Name	LA City, DWP Haynes Generating Station
City and County	Long Beach, Los Angeles County
SIC	4911
Pollutant(s)	NOx
Cycle	1
Job Gain	1
Job Loss	0
Comments	The facility hired an additional person in order to comply with the RECLAIM Monitoring, Reporting and Recordkeeping (MRR) requirements for new equipment that it began operating in the 2013 Compliance Year.

BOARD MEETING DATE: March 6, 2015

AGENDA NO. 30

**PROPOSAL:** Approve and Adopt Technology Advancement Office Clean Fuels Program Annual Report and Plan Update and Resolution and Receive and File Revised Membership of Technology Advancement Advisory Group 

**SYNOPSIS:** Each year by March 31, the Technology Advancement Office must submit to the California Legislative Analyst an approved Annual Report for the past year and a Plan Update for the current calendar year. Staff has reviewed the Clean Fuels Program with the Clean Fuels Advisory Group, the Technology Advancement Advisory Group and other technical experts. Additionally, the 2015 Clean Fuels Program Draft Plan Update was presented to the Board for review and comment at its December 5, 2014 meeting. This action is to approve and adopt the final Technology Advancement Clean Fuels Program Annual Report for 2014 and 2015 Plan Update as well as the resolution finding that proposed projects do not duplicate any past or present programs and to receive and file the revised membership of the Technology Advancement Advisory Group.

**COMMITTEE:** Technology, February 20, 2015; Recommended for Approval

**RECOMMENDED ACTIONS:**

1. Adopt the attached Technology Advancement Office Clean Fuels Program Plan Update for 2015 and include it in the SCAQMD's Clean Fuels Program;
2. Approve the attached Technology Advancement Office Annual Report for 2014;
3. Approve the attached Resolution finding that the update of the Technology Advancement Office Clean Fuels Program Plan and its proposed projects do not duplicate any past or present programs of specified organizations; and
4. Receive and file membership changes to the Technology Advancement Advisory Group.

Barry R. Wallerstein, D.Env.  
Executive Officer

## **Background**

Achieving federal and state ambient air quality standards in the South Coast Air Basin will require emission reductions from both mobile and stationary sources beyond those available from current technologies. The 2012 Air Quality Management Plan (AQMP) relies on a mix of currently available technology as well as the expedited development and commercialization of cleaner mobile and stationary advanced technologies in the Basin to achieve these standards. Specifically, the 2012 AQMP identifies the need for 200 tons/day NO<sub>x</sub> reductions to be adopted by 2020 for full implementation by 2023 and in large part focuses control measures on transportation technologies and cleaner fuels with zero and near-zero emissions in order to achieve these reductions. Moreover, if this region hopes to meet the 8-hour ozone standard of 80 ppb and 70 ppb by 2023 and 2032, respectively, it is projected that a 65% reduction in NO<sub>x</sub> is required. Additionally, preliminary 2014 data suggests the region may not have reached attainment of the 2014 standard for PM<sub>2.5</sub>. To meet new or revised measures which may be identified in the 2016 AQMP to achieve the ozone standard and the supplement to the 24-hour PM<sub>2.5</sub> State Implementation Plan to achieve the PM<sub>2.5</sub> standard in 2015, the SCAQMD Clean Fuels Program more than ever before must encourage and accelerate advancement of transformative transportation technologies and commercialization of progressively lower-emitting vehicles and fuels.

The SCAQMD Clean Fuels Program, first initiated in 1988 along with establishment of the Technology Advancement Office (TAO), is implemented as a public-private partnership in conjunction with private industry, technology developers, academic institutions, research institutions and government agencies. This public-private partnership has enabled the SCAQMD to historically leverage public funds with outside investment in a ratio of about \$3-\$4 of outside funding to every dollar of SCAQMD funding.

Health and Safety Code (H&SC) Section 40448.5.1 requires that the SCAQMD adopt a plan that describes the expected cost and benefits of proposed projects prior to any Clean Fuels Program expenditure and find that the proposed projects do not duplicate programs of other organizations specified in the H&SC provision. In 1999 SB 98 amended this provision by requiring annual updates to this Plan and 30-day public notice to specified interested parties and the public prior to the annual public hearing at which the Board takes action on the Clean Fuels Program. SB 98 also requires the preparation of an annual report with specified contents. This annual report requires the review and approval by an advisory group and the Board, prior to submittal to specified offices of the California Legislature by March 31 of each year. This legislation also specifies the make-up of the 13-member Clean Fuels Advisory Group (CFAG) and its primary responsibilities to make recommendations regarding the most cost-effective projects that advance and implement clean fuels technology and improve public health. The membership of the CFAG was initially approved by the Board in September 1999. Changes to the composition are reviewed by the Board's Technology Committee on an as-needed basis. Prior to formation of the CFAG, the SCAQMD had formed the Technology



Advancement Advisory Group (TAAG) to review and assess the Clean Fuels Program. The charter and membership of the TAAG was revisited in 1999 with formation of the CFAG so their function would complement each other. The TAAG's charter specifies membership changes must be approved by the Board's Technology Committee. Membership changes to both advisory groups were approved by the Board and Technology Committee, respectively, last year in conjunction with approval of the prior reports.

### **Proposal**

This package includes an adoption resolution (Attachment A), proposed new advisory group members (Attachment B) and one combined document comprising the TAO Clean Fuels Program 2014 Annual Report and 2015 Plan Update (Attachment C). This action is for the Board to approve and adopt the TAO Clean Fuels Program Annual Report and Plan Update. Additionally, as part of the Board's consideration of the Plan Update, the Board must make a finding that the update to the TAO Clean Fuels Program and its proposed projects do not duplicate any past or present programs of specified organizations. The review process by the two advisory groups helps ensure that SCAQMD efforts do not duplicate projects. The advisory groups meet in-person twice a year and are also emailed the documents to review. The advisors are all experts in different fields and are members of national laboratories, state or federal agencies and academicians. Staff is also intimately involved with specific technologies through efforts at state and federal collaboratives, partnerships and industrial coalitions. Finally, staff also invites technical experts to review the Annual Report and Plan Update. Through this wide network, staff is confident there is no duplication of technology projects represented in the Plan Update as required in the H&SC. Attachment A is an adoption resolution making such a finding. Furthermore, staff recommends the Technology Committee approve, and the Board receive and file, one membership change, which was necessitated by a staff departure, to the Technology Advancement Advisory Group. That change is reflected in Attachment B.

### ***Clean Fuels Program Annual Report 2014***

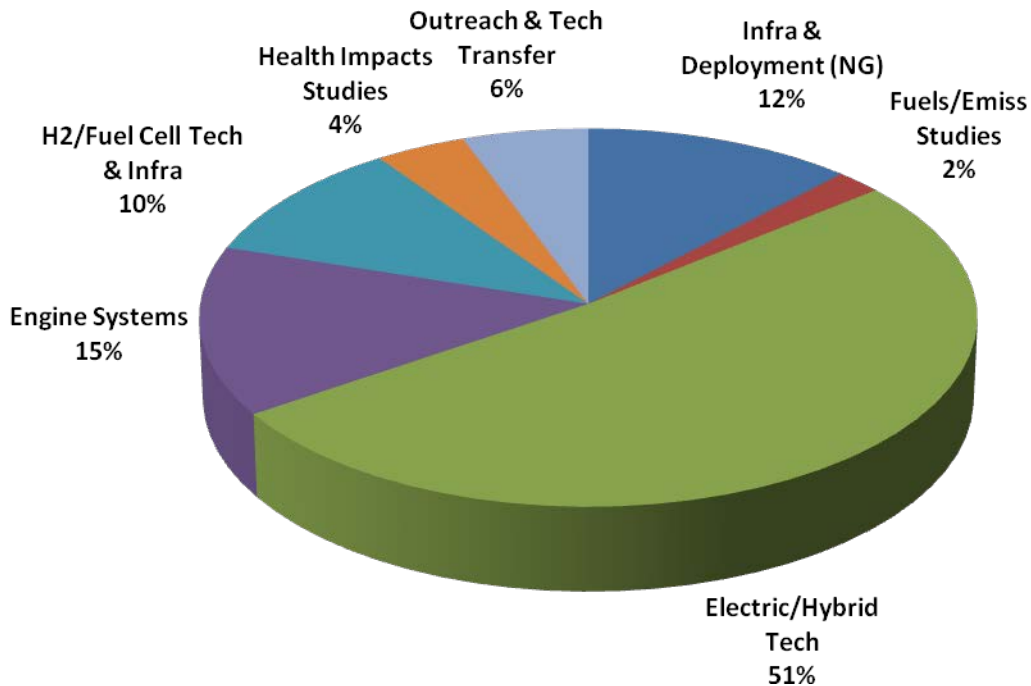
The Annual Report covers projects and progress of the Program for Calendar Year (CY) 2014. As discussed earlier, this report addresses all of the requirements specified in H&SC 40448.5.1(d). Specifically, the report includes the following required elements:

- 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 commercialization barriers;
- 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 automobile and energy firms, as determined by the SCAQMD;
- A description of projects funded by the SCAQMD, including a list of recipients, subcontractors, co-funders, matching state or federal funds and expected and

actual results of each project advancing and implementing clean fuels technology and improving public health;

- 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;
- A summary of the progress made toward the goals of the Clean Fuels Program; and
- Funding priorities identified for the next year and relevant audit information for previous, current and future years covered by the report.

During CY 2014, the Clean Fuels Program executed 65 new projects or studies and modified 7 continuing contracts adding additional dollars to sponsor research, development, demonstration and deployment projects of alternative fuel and clean fuel technologies. The SCAQMD’s contribution to these projects was approximately \$14.3 million, with total project costs of nearly \$64.7 million that includes funding from other governmental agencies, private sector, academia and research institutions. These projects address a wide range of air quality issues with a diverse mix of advanced technologies. Figure 1 shows the distribution of funding committed from the Clean Fuels Program through executed agreements in 2014. It should be noted that the executed agreements typically lag the Board awards due to the time necessary to negotiate contracts. During this phase, project awards may be reduced in scope, encounter delays in execution, or may not be contracted at all due to unforeseen difficulties following Board approval. As such, the funding distribution represents a “snapshot-in-time” of the Clean Fuels Program for the calendar year.



**Figure 1: Distribution of Clean Fuels Program Funds in CY 2014 (\$14.3 Million)**

During CY 2014, 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. Projects executed in CY 2014 included continued development and demonstration of electric and hybrid technologies and infrastructure with an emphasis on zero emission goods movement technologies, development and demonstration of heavy-duty natural gas engines and vehicles, development and demonstration of hydrogen technologies and infrastructure, and three important health studies.

In addition to the new projects, 40 research, development and demonstration projects or studies and 6 technology assessment and transfer projects were completed in CY 2014. Summaries for each of the technical projects are provided in Appendix C of the Annual Report.

The Clean Fuels Program in CY 2014 has continued to leverage other outside opportunities, with the SCAQMD securing awards totaling nearly \$20 million from federal and state funding for projects that will be included in the Clean Fuels Program or which align well with and are complementary to the Clean Fuels Program. Staff will continue to look for and pursue applicable funding opportunities.

### ***Clean Fuels Program Plan Update 2015***

Every year TAO staff re-evaluates the Clean Fuels Program to craft a Plan Update which essentially serves to re-calibrate the compass. The attached Plan Update for the Clean Fuels Program identifies potential projects to be considered for funding during 2015 and beyond. The proposed projects reflect promising low and near-zero- or zero emission technologies and applications that are emerging in the different source categories. This Plan Update includes a number of proposed projects, not all of which are expected to be funded in the current calendar year given the available budget. Some of the proposed projects for 2015 include but are not limited to: 1) conversion of a sample fleet to zero emission technologies to demonstrate commercial viability of such technologies; 2) the second phase of demonstrations for Zero Emission Container Transport (ZECT II) technology; 3) medium-duty fuel cell truck development; 4) further evaluation of biofuels including dimethyl ether; 5) partnering with the National Renewable Energy Laboratory (NREL) on fleet and technology matching analysis; 6) development and demonstration of advanced natural gas engines and zero emission technologies for high horsepower applications; and 7) lease of fuel cell vehicles (FCVs) for use in Technology Advancement’s demonstration fleet to promote marketability and demand of FCVs. Projects not funded in 2015 may be considered for funding in future years.

In addition to identifying proposed projects to be considered for funding, this Plan Update confirms nine key technical areas of highest priority to the SCAQMD. These high

priority areas are listed below based on the proposed funding distribution shown in Figure 2:

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

It should be noted that these priorities represent the areas where SCAQMD funding is thought to have the greatest impact. In keeping with the diverse and flexible “technology portfolio” approach, however, these priorities may shift during the year to: (1) capture opportunities such as cost-sharing by the state government, the federal government or other entities, (2) address specific technology issues which affect residents within the SCAQMD jurisdiction; (3) incorporate findings from studies, such as SCAQMD’s MATES IV study or the three health impact studies funded in 2014; or (4) further accelerate technology development or commercialization to implement measures that may be identified during development of the 2016 AQMP or the recently drafted supplement to the PM<sub>2.5</sub> State Implementation Plan.

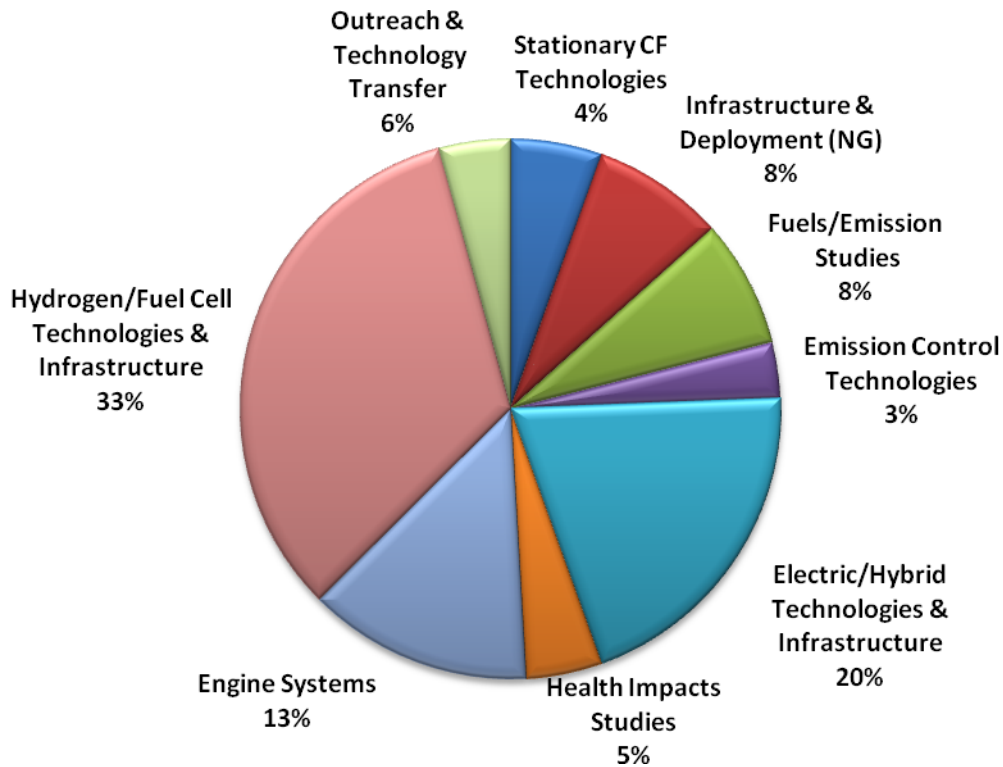
These technical priorities will necessarily be balanced by funding availability and the availability of qualified projects. Revenues from several sources support the SCAQMD’s Technology Advancement program. The principal revenue source is the Clean Fuels Program, which, under H&SC Section 40448.5 and Vehicle Code Section 9250.11, establishes mechanisms to collect revenues from mobile and stationary sources to support the program’s objectives, albeit with constraints on the use of the funds. Grants and cost-sharing revenue contracts from various government agencies, such as the California Air Resources Board, the California Energy Commission, the National Renewable Energy Laboratory and the U.S. Departments of Energy and Transportation, also support technology advancement efforts.

The proposed Plan Update is the result of a comprehensive planning and review process. This process included consideration of the 2012 AQMP control measures which represent new challenges and methodologies from the prior AQMP. It also incorporates coordination activities involving outside organizations including consideration of federal,

state and local activities and proposed integrated solutions ranging from CARB's freight strategies to proposed new provisions of the Low Carbon Fuel Standard regulation. As part of this process, staff hosted two retreats in August 2014 and January 2015 to solicit input from the Clean Fuels Advisory Group, the Technical Advancement Advisory Group and other technical experts. During these retreats, the participants reviewed the current Technology Advancement projects and discussed near-term and long-term technologies as potential projects. In November 2014, the SCAQMD also hosted a technology forum on air quality sensors to discuss sensor technology, performance and data quality, including technology demonstrations. Additionally, staff attended meetings with CARB, CEC, the California Fuel Cell Partnership, the Transportation Research Board and other entities to solicit and incorporate technical areas for potential leveraged funding and project coordination.

Based on communications with the organizations specified in H&SC Section 40448.5.1 and review of their programs, the projects proposed in this Plan Update do not appear to duplicate any past or present projects. As each individual project is recommended to the Board for funding, staff will continue to coordinate with these organizations to ensure that duplication is avoided and ensure optimal expenditure of Clean Fuels Program funds.

Finally, staff presented the Draft 2015 Clean Fuels Program Plan Update to the Technology Committee on November 21, 2014, and to the full SCAQMD Board for review and comment at its December 5, 2014 meeting. Feedback from Board Members at the public hearing was used to further refine allocations among the funding priority categories. Figure 2 graphically depicts the potential distribution of SCAQMD Clean Fuels funds, based on projected program costs of \$16.4 million, for the nine project areas discussed above.



**Figure 2: Projected Cost Distribution for Potential Projects in 2015 (\$16.4 million)**

The expected actual program expenditures for 2015 will be much less than the total 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 2015 will be based on this proposed allocation, the quality of proposals received and evaluation of projects against standardized criteria and, ultimately, the Board’s approval. At that time, additional details will be provided about the technology, its application, the specific scope of work, the project team capabilities and the project cost-sharing.

H&SC Section 40448.5.1 requires the Board approve the Clean Fuels Annual Report for 2014 and adopt the Clean Fuels Plan Update for 2015 as well as find that the proposed projects do not duplicate programs of other organizations specified in the H&SC provision. And as required, the Annual Report and Plan Update have been reviewed and approved by the SB 98 Clean Fuels Advisory Group and is due to the state by March 31, 2015.

**Attachments**

- A. Resolution
- B. Qualifications and Expertise of Proposed New Advisory Group Members
- C. TAO Clean Fuels Program 2014 Annual Report and 2015 Plan Update

## **ATTACHMENT A**

### **RESOLUTION NO. 15-**

**A Resolution of the Governing Board of the South Coast Air Quality Management District (SCAQMD) approving the Technology Advancement Office Clean Fuels Program Annual Report for 2014 and adopting the Clean Fuels Program Plan Update for 2015.**

**WHEREAS**, the Board initiated a Clean Fuels Program in 1988 to expedite the demonstration and commercialization of advanced low emission and zero emission technologies and clean fuels; and,

**WHEREAS**, Health and Safety Code Sections 40404 and 40448.5 require the SCAQMD to coordinate and manage a Clean Fuels Program to accelerate the utilization of clean-burning fuels within the South Coast Air Basin; and,

**WHEREAS**, Health and Safety Code Section 40512 and Vehicle Code Section 9250.11 authorize funding for the SCAQMD Clean Fuels Program; and,

**WHEREAS**, SB 98 (Alarcón), chaptered into state law on June 8, 1999, extended the funding authority for the Clean Fuels Program and added administrative provisions under Health and Safety Code Section 40448.5.1 regarding program planning and reporting, including:

- Providing notice to interested parties and the public at least 30 days prior to the annual public hearing at which the south coast district board or a committee of the board takes action to approve the clean-burning fuels program.
- Consulting with the SB 98 Clean Fuels Advisory Group regarding approval of the required annual report. The results of that consultation shall be provided to the south coast district board prior to its approval of the report.
- Submitting the Clean Fuels Program annual report to the office of the Legislative Analyst and to the committees of the Legislature responsible for improving air quality on or before March 31 of each year that the clean-burning fuels program is in operation.

**WHEREAS**, SB 1646 (Padilla), chaptered into state law on September 30, 2008, reauthorized the funding authority for the Clean Fuels Program, removed the sunset of January 1, 2010, and reinstated the five percent administrative cap; and,

**WHEREAS**, the Technology Advancement Office Clean Fuels Program Plan Update has been reviewed and commented on by both the Technology Advancement Advisory Group and the SB 98 Clean Fuels Advisory Group; and,

**WHEREAS**, Health and Safety Code Section 40448.5.1 requires that the SCAQMD coordinate and ensure non-duplication of clean fuels-related projects with specified organizations, including the: CARB, CEC, California air quality management districts or air pollution control districts, a public transit district or authority within the geographic jurisdiction of the south coast district, San Diego Transit Corporation, North County Transit District, Sacramento Regional Transit District, Alameda-Contra Costa Transit District, San Francisco Bay Area Rapid Transit District, Santa Barbara Metropolitan Transit District, Los Angeles Department of Water and Power, Sacramento Municipal Utility District, Pacific Gas and Electric Company, Southern California Gas Company, Southern California Edison Company, San Diego Gas and Electric Company, or the Office of Mobile Sources within the U.S. Environmental Protection Agency; and

**WHEREAS**, based on communications with the organizations specified in Health and Safety Code Section 40448.5.1 and review of their programs, the proposed program and projects included in the Technology Advancement Office Clean Fuels Program Plan Update do not duplicate any other past or present program or project funded by those organizations; and,

**WHEREAS**, notice has been provided to interested parties and the public at least 30 days prior to the annual public hearing at which the south coast district board is to approve the clean-burning fuels program; and,

**WHEREAS**, the SB 98 Clean Fuels Advisory Group has reviewed the Technology Advancement Office Annual Report.

**NOW, THEREFORE, BE IT RESOLVED**, that the Board finds the Technology Advancement Office Clean Fuels Program Plan Update does not duplicate any past or present programs or projects funded by the above-specified organizations.

**BE IT FURTHER RESOLVED**, that the Board approves the Technology Advancement Office Clean Fuels Program Annual Report for 2014.

**BE IT FURTHER RESOLVED**, that the Board adopts the Technology Advancement Office Clean Fuels Program Plan Update for 2015.

**BE IT FURTHER RESOLVED**, that the Board hereby directs staff to forward the Technology Advancement Office Clean Fuels Program Annual Report 2014 and Plan Update 2015 to the California Legislature and the Legislative Analyst by March 31, 2015.

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Dated:

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Sandra McDaniel, Clerk of the Board



**ATTACHMENT B**  
**Qualifications and Expertise of Proposed New Advisory Group Members**

**Technology Advancement Advisory Group\*\***

<p>Fabiola P. Lao, Coalition for Clean Air</p>	<p>Fabiola P. Lao is the Deputy Policy Director for the Coalition for Clean Air (CCA). Prior to joining CCA, Fabiola served as Associate Organizing Representative for the Sierra Club working on the San Gabriel Mountains Forever campaign. The San Gabriel Mountains were designated a National Monument by President Obama on October 2014, and Fabiola's leadership as chair of the campaign's outreach committee was instrumental in achieving this success. Before working on public lands issues, Fabiola worked on developing policy advocacy campaigns in California for environmental health and environmental justice non-profit organizations. She was Program Coordinator at the Breast Cancer Fund, and Policy Analyst at the Latino Issues Forum. During graduate school she was a Governing Board intern at the South Coast Air Quality Management District. Fabiola has a Master of Public Administration degree from the University of Southern California. She also has dual Bachelor in Arts degrees in Interdisciplinary Studies (Public Health concentration) and Spanish from UC Berkeley. She was also a Fellow of the Women's Policy Institute, a program of the Women's Foundation of California.</p>
<p><i>WSPA rep</i></p>	<p><i>Appointment Pending</i></p>

*\*\*The charter of the TAAG requires membership changes to be approved by the Board's Technology Committee.*

**ATTACHMENT C**

**TECHNOLOGY ADVANCEMENT OFFICE  
CLEAN FUELS PROGRAM  
2014 ANNUAL REPORT AND  
2015 PLAN UPDATE**

**South Coast Air Quality Management District  
March 2015**

# 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

Janice Rutherford\*  
Supervisor, San Bernardino County

John J. Benoit\*\*  
Supervisor, Riverside County

### ***State Representatives***

Dr. Clark E. Parker, Sr.  
Senate Rules Committee Appointee

Joseph K. Lyou, Ph.D.  
Governor's Appointee

### ***Vice Chairman***

Dennis R. Yates\*  
Mayor, City of Chino  
San Bernardino County Cities

### ***Cities Representatives***

Joe Buscaino\*  
Councilmember, City of Los Angeles  
City of Los Angeles

Michael Cacciotti  
Councilmember, City of South Pasadena  
Los Angeles County, Eastern Region

Judith Mitchell\*  
Councilmember, City of Rolling Hills  
Estates  
Los Angeles County, Western Region

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

Ben Benoit  
Mayor, City of Wildomar  
Riverside County Cities

### ***Executive Officer***

Barry R. Wallerstein, D.Env.

---

\*Technology Committee Members

\*\*Technology Committee Chairman

**South Coast Air Quality Management District  
Technology Advancement Office**

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Henry Hogo, Assistant Deputy Executive Officer, Mobile Sources  
Laki T. Tisopulos, Ph.D., P.E., Assistant Deputy Executive Officer, Source Testing, Ambient  
Monitoring & Laboratory Analysis  
Fred Minassian, Assistant Deputy Executive Officer, Technology Advancement Office  
Lourdes Cordova Martinez, Community Relations Manager

Al Baez, Program Supervisor  
Connie Day, Program Supervisor  
Ranji George, Program Supervisor  
Joseph Impullitti, Program Supervisor  
Lisa Mirisola, Program Supervisor  
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Walter Shen, Staff Specialist

Brian Choe, Air Quality Specialist  
Mark Coleman, Air Quality Specialist  
Patricia Kwon, Air Quality Specialist  
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Benigna Taylor, Contracts Assistant  
Ana Troccoli, Contracts Assistant  
Deanna Doerr, Senior Office Assistant  
Lizette Acosta, Office Assistant

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## EXECUTIVE SUMMARY

### Introduction

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 (Program), along with the SCAQMD's Technology Advancement Office (TAO). The Clean Fuels Program affords the SCAQMD the ability to fund the development, demonstration and accelerated deployment of clean fuels and transportation technologies. For over 20 years, using funding received through a \$1 motor vehicle registration fee, the Clean Fuels Program has encouraged, fostered and supported clean fuels and transportation technologies such as hydrogen and fuel cells, natural gas engines and infrastructure, battery electric vehicles, plug-in hybrid electric vehicles and related fueling infrastructure. A key strategy of the Program is its implementation as a public-private partnership in conjunction with private industry, technology developers, academic institutions, research institutions and government agencies. The SCAQMD Clean Fuels Program has traditionally supported a portfolio of technologies, in different stages of maturity, to provide a continuum of emission reductions and health benefits over time.

Health & Safety Code (H&SC) 40448.5.1 requires the SCAQMD to annually prepare, and submit to the Legislative Analyst by March 31, a Clean Fuels Annual Report and Plan Update. The Clean Fuels Annual Report looks at what the Program accomplished in the prior calendar year (CY) and the Clean Fuels Plan Update looks ahead at proposed expenditures for the next CY. This document comprises both the 2014 Clean Fuels Annual Report and the 2015 Plan Update.

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 identified the need for 200 tons/day oxides of nitrogen (NO<sub>x</sub>) reductions to be adopted by 2020 for full implementation by 2023 and in large part focused control measures on transportation technologies and cleaner fuels. 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."<sup>1</sup> 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). Ozone (smog) is created by a chemical reaction between NO<sub>x</sub> and volatile organic compounds (VOC) emissions at ground level. This is especially noteworthy because the largest contributor to ozone is NO<sub>x</sub> emissions, and mobile sources (on- and off-road as well as aircraft and ships) contribute to more than three-fourths of the NO<sub>x</sub> emissions in this region.

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<sup>1</sup> [http://www.arb.ca.gov/planning/vision/docs/vision\\_for\\_clean\\_air\\_public\\_review\\_draft.pdf](http://www.arb.ca.gov/planning/vision/docs/vision_for_clean_air_public_review_draft.pdf)

The daunting challenge to reduce ozone and NO<sub>x</sub> requires the Clean Fuels Program to encourage and accelerate advancement of transformative fuel and transportation technologies, leading the way for commercialization of progressively lower-emitting fuels and vehicles. If this region hopes to meet the 8-hour ozone standard (80 ppb) by 2023 (or the revised standard of 75 ppb by 2032), it is projected that a 65% reduction in NO<sub>x</sub> is required. The NO<sub>x</sub> 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. In addition to NO<sub>x</sub> and VOCs, fine particulate matter (PM<sub>2.5</sub>) produced from mobile sources must also be reduced. From preliminary 2014 data, it appears the region may not have reached attainment of the 2014 standard for PM<sub>2.5</sub>. A supplement to the 24-hour PM<sub>2.5</sub> State Implementation Plan (SIP) will focus on achieving the PM<sub>2.5</sub> standard in 2015, and a 2016 AQMP will focus on achieving the ozone standards. Given the relationship between NO<sub>x</sub> and ozone and possible control strategies that might be identified for PM<sub>2.5</sub> attainment by 2015, the 2015 Plan Update must emphasize emission reductions in these areas.

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 are emphasized in the 2015 Plan Update portion of the report. The 2014 Annual Report highlights the projects contracted during the previous calendar year and reflects the current status of the program.

## **2014 Annual Report**

During CY 2014 the SCAQMD executed 65 new contracts, projects or studies and modified 7 continuing projects adding additional dollars toward research, development, demonstration and deployment (RDD&D) of alternative fuel and clean fuel technologies. Table 2 (page 28) lists these 72 projects or studies, which are further described in this report. The SCAQMD Clean Fuels Program contributed approximately \$14.3 million in partnership with other governmental organizations, private industry, academia and research institutes, and interested parties, with total project costs of nearly \$64.7 million. Table 3 (page 31) provides information on outside funding received into the Clean Fuels Fund (almost \$6 million in 2014) as cost-share passed through the SCAQMD for the contracts executed in CY 2014. Table 4 (page 32) provides a comprehensive summary of federal and state revenue awarded to the SCAQMD during CY 2014 (nearly \$20 million) for projects to be included within the Clean Fuels Program or which align well with and are complementary to the Clean Fuels Program.

The projects or studies executed in 2014 addressed a wide range of issues and opportunities with a diverse mix of advanced technologies. The following core areas of technology advancement for 2014 executed projects (in order of funding percentage) include:

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



- Fuels and Emission Studies
- Outreach and Technology Transfer

During CY 2014, 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 executed in CY 2014 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, natural gas fueling infrastructure, and development and demonstration of hydrogen technologies and infrastructure.

As of January 1, 2015, there were 121 open contracts in the Clean Fuels Program; these are summarized in Appendix B.

Forty research, development, demonstration and deployment projects or studies and six technology assessment and transfer contracts were completed in 2014, as listed in Table 5 (page 61). Appendix C comprises two-page summaries of the technical projects completed in 2014. 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, 2015, after approval by the SCAQMD Governing Board.

## **2015 Plan Update**

Every year TAO staff re-evaluates the Clean Fuels 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. As the state and federal governments have turned a great deal of their attention to climate change, the SCAQMD has remained committed to developing, demonstrating and commercializing zero and near-zero emission technologies. Fortunately many, if not the majority, of technology sectors that address our need for NO<sub>x</sub> reductions also garner greenhouse gas (GHG) reductions. Due to these “co-benefits,” the SCAQMD has been successful in partnering with the state and federal government. 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. These range 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<sub>x</sub>, 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<sub>x</sub> and PM<sub>2.5</sub> reductions will be needed to meet the federal PM<sub>2.5</sub> standard in 2015, significant NO<sub>x</sub> and PM<sub>2.5</sub> reductions will be necessary to meet the federal 8-hour ozone standards by 2023 and 2032, in addition to 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<sub>2.5</sub> standard of 12 µg/m<sup>3</sup>. 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 6 lists the potential projects across the core technologies identified in this report. Potential projects for 2015 total more than \$16.4 million, with anticipated leveraging of approximately \$79 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**

## **Background & Overview**

### **Program Background**

The Basin, which comprises all of Orange County and the urban portions of Los Angeles, 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 to the Legislature, on or before March 31 of each year, 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.

Furthermore, H&SC section 40448.5.1(a)(2) requires the SCAQMD to find that the proposed program and projects funded as part of the Clean Fuels Program will not duplicate any other past or present program or project funded by the state board and other government and utility entities. This finding does not prohibit funding for programs or projects jointly funded with another public or private agency where there is no duplication. The following section describes the panel of external experts that helps review the Clean Fuels Program.

### **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. Current membership changes to both advisory groups, if required, will be considered by the SCAQMD Board and its Technology Committee, respectively, as part of consideration of the 2014 Annual Report and 2015 Plan Update. The current members of the SB 98 Clean Fuels Advisory Group and Technology Advancement Advisory Group are listed in Appendix A, with any proposed changes, subject to SCAQMD Board approval, duly noted.

The review process of the Clean Fuels Program now includes at least two full-day retreats of the two Advisory Groups, typically in the summer and winter, 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, along with adoption of a resolution finding that the proposed program and projects funded as part of the Clean Fuels Program will not duplicate any other past or present program or project funded by the state board and other government and utility entities, as required by the H&SC, and finally submittal of the Annual Report and Plan Update to the Legislature by March 31 of every year.

## **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<sub>x</sub> emissions by category and identifies just how far those emissions must be reduced to meet federal standards by 2023 and 2032.

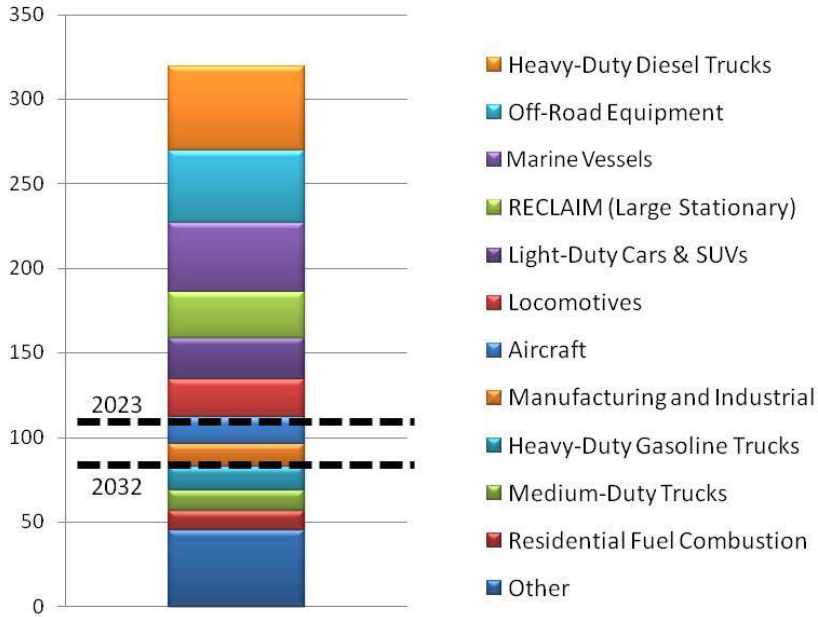


Figure 1: 2023 NO<sub>x</sub> Emissions by Category

Additionally, the following piechart reflects NO<sub>x</sub> 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<sub>x</sub> by 2020 as well as why this region is recognized as an extreme ozone nonattainment area.

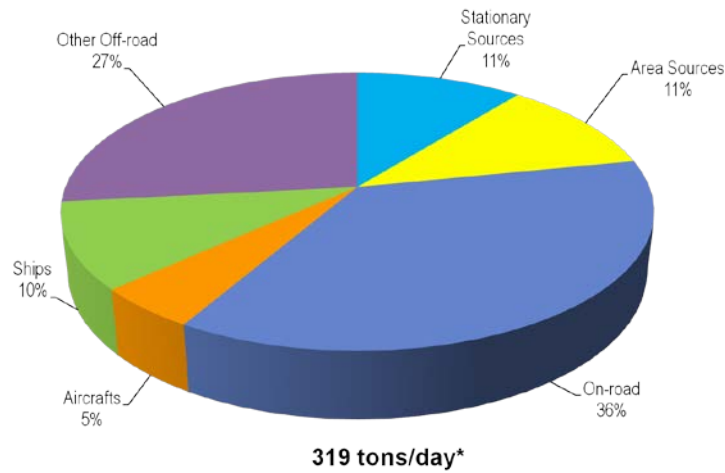
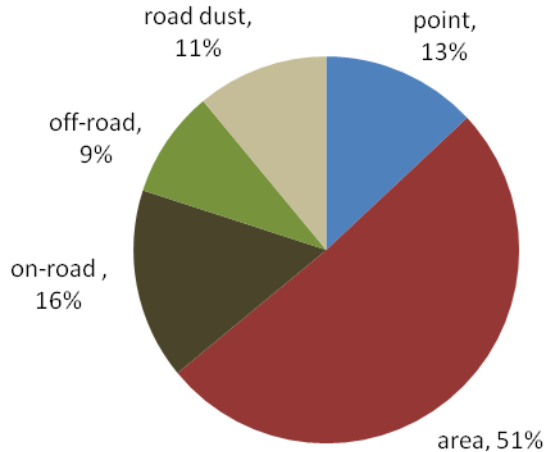


Figure 2: NO<sub>x</sub> Contributors by Sector

Finally, the following piechart reflects the relative contribution of PM<sub>2.5</sub> by source category to the 2023 emission inventory for an average annual day. A supplement to the 24-hour PM<sub>2.5</sub> SIP will address further PM reductions since preliminary 2014 data appears to suggest that the 24-hour PM<sub>2.5</sub> standard was not attained in 2014 as anticipated.



**Figure 3: Directly Emitted PM<sub>2.5</sub> Emissions (71 tons/day)**

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<sub>x</sub> and VOC. The 2012 AQMP's estimate of needed NO<sub>x</sub> reductions, as well as the 2016 AQMP currently being drafted to meet federal ozone standards, 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<sub>x</sub> 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 showed 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. While the goal of MATES IV, like the prior studies, was to assess air toxic levels, update risk characterization, and determine gradients from selected sources, MATES IV added ultrafine PM and black carbon monitoring components as well. A draft report on the findings was released for public review in October 2014. The study found a dramatic decrease in ambient levels of diesel

particulate matter and other air toxics. Diesel PM was still the major driver of air toxics health risks. While the levels and exposures decreased, a revision to the methods used to estimate cancer risk from toxics developed by the California Office of Health Hazard Identification will increase the calculated risk estimates from these exposures by a factor of up to three.

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 2007 Low Carbon Fuel Standard (LCFS) required producers of petroleum-based fuels to reduce their product's carbon intensity, beginning in 2011 and culminating in a 10 percent total reduction by 2020. However, CARB is currently revising the LCFS regulation and proposed provisions are designed to foster investments in the production of low carbon intensity fuels. Hopefully, this will accelerate research into alternatives to oil and traditional fuels. 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 directing regional planning agencies to develop land-use strategies to meet the targets. While the landmark Global Warming Solutions Act of 2006 (AB 32) required California's greenhouse gas emissions to be capped at 1990 levels by 2020, 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.

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 zero emission 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 early January 2015 Governor Brown's state-of-the-state address included ambitious goals to help meet California climate targets for 2030 and beyond, including increasing the amount of electricity generated from renewable sources from 33 to 55 percent and reducing the use of petroleum in cars and trucks by up to 50 percent from today's levels.

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).

The Clean Fuels 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 program funding, provide a 2014 overview and describe core technologies 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 2014 the funds available through each of these mechanisms were as follows:

- |   |              |
|---|--------------|
| • Mobile sources (DMV revenues)               | \$12,742,599 |
| • Stationary sources (emission fee surcharge) | \$345,016    |

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 31) lists supplemental grants and revenues totaling nearly \$6 million for contracts executed in CY 2014. Table 4 (page 32) lists federal and state revenue totaling nearly \$20 million awarded to the SCAQMD in 2014 for projects that will be part of the Clean Fuels Program or align well and will 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 2014, the Clean Fuels Program leveraged each \$1 to approximately \$5 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 2014 are listed in Table 1 (page 16).

## **2014 Overview**

This report summarizes the progress of the SCAQMD Clean Fuels Program for CY 2014. The SCAQMD Clean Fuels 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.

This report also highlights achievements and summarizes project costs of the SCAQMD Clean Fuels Program in this period. During the period between January 1 and December 31, 2014, the SCAQMD executed 65 new contracts, projects or studies and modified 7 continuing projects adding additional dollars during CY 2014 that support clean fuels and advanced zero, near-zero and low emission technologies. The SCAQMD Clean Fuels Program contribution for these projects was approximately \$14.3 million, inclusive of nearly \$6 million received into the Clean Fuels Program as cost-share for contracts executed in this reporting period, with total project costs of nearly \$64.7 million. These projects address a wide range of issues with a diverse technology mix. The report not only provides information on outside funding received into the Clean Fuels Fund as cost-share for contracts executed in this period (summarized in Table 3), but also 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 (\$20 million in 2014). More details on this financial summary can be found later in this report. The SCAQMD will continue to pursue federal and state funding opportunities in 2015 to amplify leverage, while acknowledging that support of a promising technology is not contingent on outside cost-sharing.

## **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)
- Engine Systems (particularly heavy-duty natural gas engines for truck and rail applications)
- Infrastructure and Deployment (predominantly compressed and liquid natural gas)
- Hydrogen and Fuel Cell Technologies and Infrastructure
- Emissions, Fuels and Health Impacts Studies
- Stationary Clean Fuels Technologies
- Emission Control Technologies
- Outreach and Technology Transfer

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

1. Low, near-zero 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 while balancing the needs in the various technology sectors with technology readiness, emissions reduction potential and co-funding opportunity. Although the SCAQMD program is significant, 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. Nonetheless, while the state and federal governments have turned a great deal of their attention to climate change, the SCAQMD has remained committed to developing, demonstrating and commercializing zero and near-zero emission technologies. Fortunately many, if not the majority, of technology sectors that address our need for NO<sub>x</sub> reductions also garner greenhouse gas (GHG) reductions. Due to these “co-benefits,” the SCAQMD has been successful in partnering with the state and federal government. 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. To do this, the SCAQMD employs a number of outreach and networking activities. These range 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. 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. Every year TAO staff re-evaluates the Clean Fuels Program to craft a comprehensive plan (referred to as the 2015 Plan Update within this document) essentially recalibrating the compass for 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<sub>x</sub> technologies and clean energy alternatives such as fuel cells, solar power and other renewable energy systems. The focus on recent years has been on zero and near-zero emission technologies to reduce emissions from mobile sources, which contribute to more than three-fourths of the NO<sub>x</sub> emissions in this region. And while mobile sources include both on- and off-road vehicles as well as aircraft and ships, only the federal government has the authority to regulate emissions from aircraft and ships. As previously mentioned, however, in 2011, CARB adopted amendments to low-sulfur marine fuel requirements to extend the nautical zone out from the ports.

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 2014-15 Goals and Priority Objectives, which is to continue demonstration and deployment of projects achieving zero tailpipe emissions for container transport.

### **Engine Systems**

Medium- and heavy-duty on-road vehicles contributed approximately 36 percent of the Basin's NO<sub>x</sub> based on 2007 AQMP data. More importantly, on-road heavy-duty diesel engines contributed almost 60 percent of the on-road mobile source PM<sub>2.5</sub>, 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<sub>x</sub> and 7.5 tons per day of PM emissions in the Basin. Furthermore, while MATES IV found a dramatic decrease in ambient levels of diesel PM and other air toxics, diesel PM is still the major driver of air toxics health risks. 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<sub>x</sub> and particulate emissions. The current NO<sub>x</sub> 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 low-emission 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.

### **Infrastructure and Deployment (NG)**

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. Having said that, there is a concern that falling oil prices may cause a resurgence in diesel fuel desirability and movement away from natural gas use. 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.

### **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<sub>x</sub> 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, a couple of years ago the SCAQMD 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 continued in 2014 to further investigate the toxicological potential of emissions, such as ultrafine particles and vapor phase substances, and to determine whether or not other substances such as volatile or semi-volatile organic compounds are being emitted in lower mass emissions that could pose harmful health effects.

## **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.

## **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.

## **Outreach and Technology Transfer**

Since the value of the Clean Fuels Program depends on the deployment and adoption of the demonstrated technologies, outreach and technology transfer efforts are essential to its success. This core area encompasses assessment of advanced technologies, including retaining outside technical assistance as needed, efforts to expedite the implementation of low emission and clean fuels technologies, coordination of these activities with other organizations and information dissemination to educate the end user. Technology transfer efforts include support for various clean fuel vehicle incentive programs as well.

# CLEAN FUELS PROGRAM

## Barriers, Scope and Impact

### Overcoming Barriers

Commercialization and implementation of advanced technologies come with a variety of challenges and barriers. A combination of real-world demonstrations, education, outreach and regulatory impetus and incentives is necessary to catalyze new, clean technologies. 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. Barriers 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
- Fuel availability/convenience issues
- Certification, safety and regulatory barriers
- Quantifying emissions benefits
- Sustainability of market and technology

#### Project-Specific Issues

- Identifying a committed demonstration site
- Overall project cost and cost-share using public monies
- Securing the fuel
- Identifying and resolving real & perceived safety issues
- Quantifying the actual emissions benefits
- Viability of the technology provider

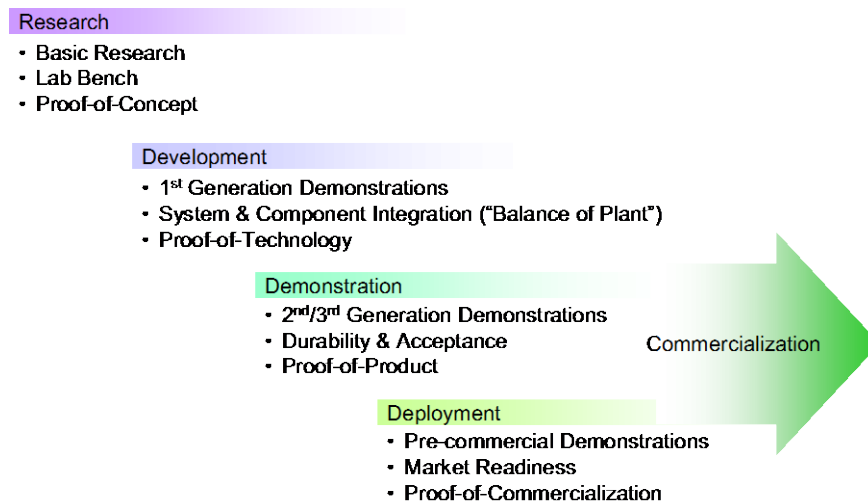
Other barriers include reduced or shrinking research budgets, infrastructure and energy uncertainties and risks, sensitivity to multi-media environmental impacts and the need to find balance between environmental needs and economic constraints. The SCAQMD seeks to address these barriers by establishing 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.

## Scope and Benefits of the Clean Fuels Program

Since the time needed to overcome barriers can be long and the costs high, both manufacturers and end-users tend to be discouraged from considering advanced 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 4 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 4: 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<sub>x</sub> 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.

## Strategy and Impact

In addition to the feedback and input detailed in Program Review (pages 1-2), 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 California Fuel Cell Partnership (CaFCP), the California Stationary Fuel Cell Collaborative, the California Natural Gas Vehicle Partnership (CNGVP), the California Plug-In Electric Vehicle (PEV) Collaborative, the Electric Power Research Institute (EPRI), the West Coast Collaborative, which is part of the National Clean Diesel Campaign, and the Manufacturers of Emission



Controls Association (MECA). The coordination efforts with these various stakeholders have resulted in a number of cosponsored projects.

Descriptions of some of the key contracts executed in CY 2014 are provided in the next section of this report. It is noteworthy that most of the projects are cosponsored by various funding organizations and include the active involvement of original equipment 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 2014 Project Summaries (beginning page 28) contained within this report.

**Table 1: SCAQMD Major Funding Partners in CY 2014**

<b>Research Funding Organizations</b>	<b>Major Manufacturers/Providers</b>
California Air Resources Board	Ports of Los Angeles & Long Beach
California Energy Commission	Southern California Gas Company
National Renewable Energy Laboratory	University of California Riverside/ CE-CERT
U.S. Department of Energy	Other California Universities (Davis, Irvine, LA)
U.S. Environmental Protection Agency	Siemens Industry Inc.
	Transportation Power Inc.

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 2014. Such examples are provided in the following sections on the Technology Advancement Office’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 include: (a) development and demonstration of a catenary zero emissions goods movement system in conjunction with development and demonstration of diesel catenary hybrid electric trucks; (b) development of Class 8 zero emission electric trucks; (c) development of a plug-in hybrid electric retrofit system for Class 6-8 trucks; (b) development, integration and demonstration of ultra-low emission natural gas engines for heavy-duty vehicle applications; and (e) a health study to develop quantitative cellular assays for use in understanding the chemical basis of air pollutant toxicity.

#### **Develop and Demonstrate Catenary Zero Emissions Goods Movement System**

The SCAQMD has identified the development and deployment of zero-emissions goods movement transportation systems as one of the agency’s top priorities in order to attain federal air quality standards. Zero-emission transportation and goods movement technologies are also being proposed in SCAG’s 2012 Goods Movement Appendix to the Regional Transportation Plan as

well as the joint CARB, SCAQMD and SJVAPCD “Vision for Clean Air: A Framework for Air Quality and Climate Planning”. Zero-emission truck lanes are also being considered for the I-710 freeway expansion, which is an approximately 20 mile north-south trade corridor.

The primary goal of this project is to promote the implementation of zero-emission goods movement technologies, and the secondary goal is to demonstrate the most viable technology to be adopted for a future, regional zero-emissions corridor. Although this project is for a one-mile demonstration, the potential next phase is to build out the remaining route from the ports to the near-dock rail yard which is approximately 5 miles. Subsequent phases would be to initiate the design and build the same or similar technology for the I-710 expansion and an east-west trade corridor for containers going to the Inland Empire warehouses.

Siemens Industry Inc. (Siemens) has designed and demonstrated a catenary truck technology, eHighway, in Germany on a European truck chassis. For this project, Siemens proposes to bring the eHighway technology to southern California with their partner Volvo and to develop and demonstrate a catenary plug-in hybrid electric truck technology. The hybrid drive system will extend the operating range of the truck beyond the all-electric range of the catenary system, enabling the truck to perform regional drayage operations and bridge gaps in catenary infrastructure as it is deployed on a regional level. Siemens and Volvo propose to develop and integrate a Mack Granite Vision diesel hybrid electric class 8 truck configured to operate on the catenary system. The vehicle will use Volvo’s current hybrid 150 kW electro-mobility propulsion system, upgraded with a pantograph to operate on the eHighway system. The Siemens’ pantograph system will allow for seamless connection and detachment from the catenary power source. When entering the catenary system corridor, the pantograph system will verify the



**Figure 5: Catenary-Accessible Trucks on the Siemens' Test Track in Berlin, Germany**

presence of catenary lines and allow the driver to raise the pantograph from within the cab of the truck. Upon leaving the catenary lane, the pantograph will automatically retract and the truck will switch to on-board power systems. The on-board power systems could be a range of technologies, including batteries, fuel cells or internal combustion engines.

There will be a total of four trucks operating on the catenary system. There will be the one from Volvo mentioned above plus three more from other projects initiated by SCAQMD. TransPower, a local integrator, will develop two trucks--a CNG hybrid and battery electric truck, and Kenworth, with its partner BAE Systems, will develop and test a CNG hybrid.

### **Develop and Demonstrate Additional Class 8 Zero Emission Battery Electric Trucks**

Heavy-duty diesel trucks in the South Coast Air Basin remain a significant source of emissions with adverse health effects, especially in the surrounding communities along the goods movement corridors near the Ports of Los Angeles and Long Beach and next to major freeways. In order to mitigate the impact and attain stringent federal ozone standards, SCAQMD has been aggressively promoting and supporting the development and deployment of advanced zero-emission cargo transport technologies, including battery electric trucks.

In October 2012, Transportation Power Inc. (TransPower) was awarded \$1.14 million, as part of a DOE grant, to develop and demonstrate four Class 8 zero emission battery electric drayage trucks

in real world operations, transporting cargo containers from the Ports of Los Angeles and Long Beach to local warehouses and intermodal facilities. Subsequent to the award, TransPower received additional funding from CEC and the San Pedro Bay Ports' Technology Advancement Program to develop three more electric drayage trucks to demonstrate a total of seven trucks. This project is to cost-share the development and demonstration of the three additional trucks and also to fund related engineering design upgrades. These upgrades are based on lessons learned from the manufacture and operation of a prototype electric truck, which was also previously cost shared by the SCAQMD. TransPower anticipates the upgrades will collectively increase the operating efficiency and reduce vehicle assembly costs by approximately 25 percent, significantly improving the commercial value of the drive system.

Some of the key advances to be developed and incorporated in this project include the following:

- Automated manual transmission – a development of proprietary software to precisely match powertrain gearing to vehicle torque requirements, improving performance and operating efficiency. It will also achieve significant cost savings through the use of a lower-cost off-the-shelf



**Figure 6: TransPower Electric Drayage Truck**

- manual transmission.
- Advanced energy storage subsystem – a major redesign of the battery pack to simplify the assembly and servicing of the trucks with a larger and more rugged battery enclosures, requiring much less wiring and connectors. A new battery management system (BMS) will be also developed to communicate more reliably and balance cells faster and more efficiently than competing BMS boards, improving the operating range and battery life.
- Power control and accessory subsystem – an innovative concept to pre-integrate most vehicle controllers and electrically driven accessories on a module before vehicle installation. Previously, these components were mounted directly onto the vehicle in various locations, requiring complex wiring and hundreds of hours for installation. This new pre-integration approach will not only be easier and safer but will also reduce significant time and costs in assembly and servicing of production vehicles.
- TransPower will partner with Total Transportation Services, Inc., a licensed motor carrier operating at the Ports of Los Angeles and Long Beach and other fleet operators, to demonstrate these trucks in revenue drayage service for two years or more to evaluate their performance and reliability.

### **Develop and Demonstrate Plug-In Hybrid Electric Retrofit System for Class 6 to 8 Trucks**

The objectives of this project are to develop and design a retrofit plug-in hybrid electric system for work truck applications, such as bucket trucks, digger derricks, and underground utility trucks. During the two-year period of the project, the Odyne Systems will develop and evaluate concept designs, produce a selected concept, and evaluate one plug-in hybrid-electric medium-

and heavy-duty work truck with extended stationary engine-off technology. The one vehicle will be deployed in the South Coast Air Basin. The primary objectives of this project are:

- To improve specific aspects of the existing system through the use of smaller, lower cost components.
- To optimize the system and selected powertrain components for high volume production to enhance commercial appeal through lower-cost products and components.
- To match the size of the power electronics and energy storage device to customer duty cycle and work practice.

To quantify improvements in fuel economy and emissions the project will gather vehicle and component performance data during deployment that will enable the operating cost and environmental impact of the vehicle to be assessed. The Odyne hybrid retrofit solution will



**Figure 7: Class 7 Bucket Truck Equipped with Odyne Plug-In Hybrid Drive System**

provide fleets an option in the SCAQMD to address the emissions that are being created from existing diesel vehicles within the fleet. This option will provide an immediate impact on the emissions being created and will not require the fleets to turn over the entire fleet to have a significant impact on emissions. On new vehicles the fleets can continue to purchase vehicles with the Odyne plug-in hybrid solution and retire the oldest, highest emission producing vehicles in the fleet. The Odyne retrofit solution will also provide an economical solution to address the existing vehicles within the South Coast Air Quality District. With retrofit vehicles having a shorter life before they are retired, the retrofit solution needs to

provide a payback within three to five years. With fuel and maintenance savings of \$5,000 to \$8,000 per year and a targeted sell price of less than \$30,000.00, the Odyne retrofit solution should provide those benefits for many applications.

### **Develop, Integrate and Demonstrate Ultra-Low Emission Natural Gas Engines from On-Road Heavy-Duty Engines**

Heavy-duty on-road diesel vehicles are currently one of the largest sources of NO<sub>x</sub> emissions in the South Coast Air Basin. This source category is still projected to be one of the largest contributors to NO<sub>x</sub> emissions, even as the legacy fleet of older and higher polluting vehicles are retired from operation and replaced by the vehicles meeting the most stringent emission levels required by 2010 emissions standards. The 2012 AQMP showed that NO<sub>x</sub> reductions in excess of 60% will be needed from all source categories to meet future federal ambient air quality standards for ozone. The development of ultra-low emission natural gas engines would significantly reduce emissions from this source category and assist the region in meeting federal ambient air quality standards in the future.

SCAQMD worked closely with the California Energy Commission, Southern California Gas Company and the U.S. Department of Energy to craft a Request for Proposals to solicit proposals for the development of an ultra-low NO<sub>x</sub> emissions engine. CARB also adopted optional



emission standards of 0.02 g/bhp-hr to enable incentive funding which improves market opportunity.

Cummins, Inc. proposed to develop, integrate and demonstrate in typical operations a 15L natural gas engine meeting the optional standard of 0.02 g/bhp-hr NO<sub>x</sub>, which is 90% lower than current 2010 emission standards, 0.01 g/bhp-hr PM, 0.14 g/bhp-hr NMHC, and 15.5 g/bhp-hr CO with a maximum average of 10 ppm ammonia during the U.S EPA Heavy-Duty Engine Federal Test Procedure (HD-FTP).

NO<sub>x</sub> emissions 90% lower than current production engines will require improved and



**Figure 9: Heavy-Duty NG Engine**



**Figure 8: Typical Heavy-Duty Drayage Truck**

more uniform combustion cycle to cycle within each cylinder and from cylinder to cylinder as well as improved low temperature NO<sub>x</sub> control during engine startup and engine idling periods. As a result, the project provides for extensive theoretical engine and after treatment computer modeling, component bench testing, and prototype engine tests during the first year. A design review after the first year determines whether the project should continue to development of a pre-production engine for optimizing calibrations and emission certification tests.

Upon successful HD-FTP tests, two production-intent engines will be integrated into commercial trucks for a six month field demonstration in typical service including chassis dynamometer tests. The goal of this project is to achieve a production-intent ultra-low NO<sub>x</sub> emission natural gas heavy-duty engine that could enter the market by 2020. The target vehicle applications include Class 8 refuse, goods movement and drayage trucks.

### **Develop Quantitative Cellular Assays for Use in Understanding the Chemical Basis of Air Pollutant Toxicity**

The objective of this research is to develop a biological mechanism-based analytical procedure to characterize the toxicity air pollutants. The study is developing and characterizing a standard in quantities sufficient to be employed in subsequent toxicity analyses of vehicle emissions and ambient pollutants. The project aims to collect a large quantity of diesel exhaust, including both particulate and vapor phase, from a well-characterized engine using low-sulfur fuel as the standard. Quantitative dose response toxicity assays can then be conducted with, for example, emissions from advanced technology engines to compare with results from assays using the standard diesel emissions. This will provide a measure of the relative toxic potency of vehicle emissions that can be directly compared in standard assays.

This project builds upon the toxicity assays developed under the auspices of the Southern California Particle Center, which was sponsored by U.S. EPA. The assays target specific biochemical pathways and proteins that are thought to be involved in the toxicity of pollutants. The pathways include inflammation, cellular oxidation potential and chemical reactions with cellular proteins. Specific chemical assays will be used, as well as specific macrophage cell lines that have been used in previous air pollution toxicity studies. Standard protocols are being developed that can be applied to collected pollutant samples.

The results of this project will provide information to help understand the linkage between sources, chemical composition and the toxicity of emissions from motor vehicles, which will provide a strong scientific basis on which to develop and to assess strategies designed to protect the public from exposure to motor vehicle emissions. This study will provide advanced tools for assessing the relative toxicity of emissions sources and which technologies may be more important in reducing potential health effects from exposures to particles as well as to semi-volatile organic substances. These tools can then be used to quantify the benefits of using alternate and advanced technology to reduce emissions derived from motor vehicles and from other emissions sources. Additionally, development of these toxicity assays will be an invaluable resource to particulate matter exposure and health studies in the Los Angeles Basin.

### ***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 2014 reporting period illustrate the impact of the SCAQMD’s technology deployment and commercialization efforts and include: (a) participation in NREL’s Fleet DNA Study; (b) construction of eight retail hydrogen fueling stations; and (c) continuing support for natural gas fueling stations.

#### **Fleet DNA Study**

On-road medium- and heavy-duty trucks are a significant source of NO<sub>x</sub> emissions in the South Coast Air Basin (SCAB). Consequently, research is needed to determine how this source of emissions can be significantly reduced at minimum cost to facilitate attainment of ambient air quality standards by 2023 and 2032. The SCAQMD is cost-sharing National Renewable Energy Laboratory (NREL)’s Fleet DNA Project to collect and analyze data on truck fleet operations in the SCAB in order to determine the best approach for the deployment of advanced technologies in this sector.

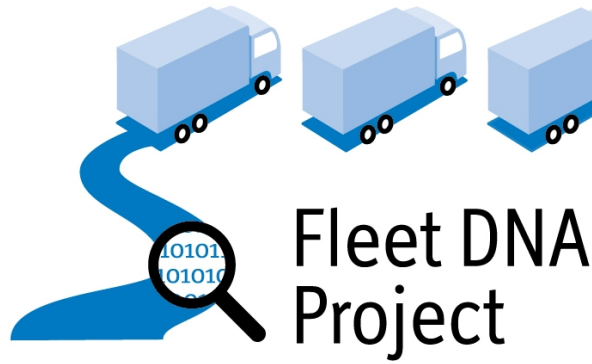


Figure 10: NREL's Fleet DNA Project Logo

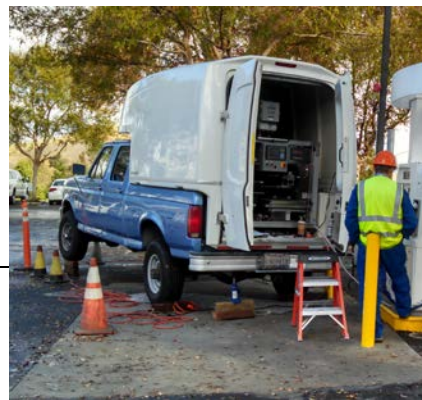
This project will be divided into three tasks. The first task is the identification of appropriate fleet vocations by using existing databases to determine emissions inventory contribution. This will involve, for example, the analysis of population, age distribution, annual vehicle miles traveled, and estimated fuel usage for specific fleet vocations. Fleet vocation categories that may be analyzed as part of this task include refuse, urban delivery, drayage and long haul applications. At the conclusion of this task, the highest ranking fleet vocations will be recommended for further data collection and analysis of operational characteristics. The second task is the collection of operational data on three selected fleets representing different vocations. Sufficient operational data will be collected to 'bracket' the range of operation for each vocation, using NREL's Drive-cycle Rapid Investigation, Visualization and Evaluation Tool (DRIVE). The final task entails the use of NREL's Future Automotive Systems Technology Simulator Tool (FASTSim), utilizing drive cycle information generated with DRIVE in the previous task, to evaluate the impact of technology improvements on emissions, vehicle efficiency, performance, cost and operating economics where applicable. Examples of technologies to be assessed include electrification, natural gas, biofuels, aerodynamic improvements, mass reduction and engine sizing.

### Construction of Eight Hydrogen Fueling Stations including SCAQMD's Diamond Bar Station

In late 2010, the CEC released a Notice of Proposed Award (NOPA) recommending funding for eight projects that would develop hydrogen fueling infrastructure within the South Coast Air Basin. The eight stations will be strategically located and will play a significant role by providing hydrogen in Southern California in areas with high vehicle densities. The SCAQMD cost-shared this project to offset high initial costs and investment for production and distribution of hydrogen for these stations.

The eight proposed hydrogen fueling stations will be new, publicly accessible, next generation (35 MPa and 70 MPa) hydrogen fueling stations located throughout Southern California, including the construction and upgrade of an existing station at SCAQMD Headquarters in Diamond Bar. They will utilize improved delivery technologies to reduce the cost of transporting low-priced hydrogen made in centrally located facilities with high availability. The station

concepts are simple, modular, expandable to full-sized station capacities, and reduce initial capital costs at the point of use including reduced overall site maintenance costs. The modular design incorporates a minimized station footprint to utilize existing retail gasoline forecourt locations and



can be readily duplicated at a majority of existing gasoline retail stations in a number of markets for the broadest deployment. Due to the requirements of SB 1505, hydrogen made from renewable resources will also be made available for dispensing on a regular basis.

The first station at SCAQMD will serve as the model for the other modularly constructed delivered-hydrogen stations and will accept major credit cards. EPC LLC entered into a license agreement to operate SCAQMD's hydrogen fueling station in Diamond Bar. The license allows EPC to assign or sublet with SCAQMD's written permission; Air Products and Chemicals, Inc. will be providing equipment maintenance. EPC LLC obtained all permits for construction, maintenance, and operation and will be operating the station for three years, including installation and operation of the point-of-sale (credit card) system. The California Department of Food and Agriculture, Division of Measurement Standards (CDFA/DMS) conducted accuracy testing and issued a Temporary Use permit in December 2014. When final Type Evaluation for accuracy and consistency is successfully completed, this dispenser can be used at multiple stations with reduced testing cost and time.

Figure 12: CDFA/DMS Testing

Figure 11: Hydrogen Dispenser in Diamond Bar

The remaining seven stations will be operational in time for the expected roll out of fuel cell vehicles in the 2015-2016 timeframe.

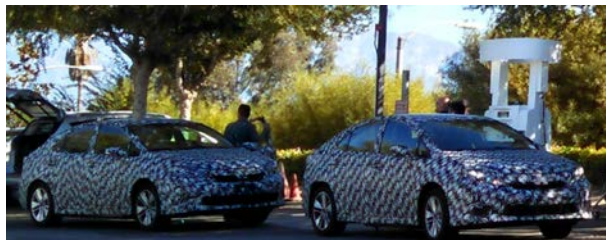


Figure 13: Testing Fuel Cell Vehicles with the New Hydrogen Station

### Continuing Support for Natural Gas Fueling Stations

Goods movement throughout Southern California and the increased number of heavy-duty Class 8 LNG-powered trucks used for moving these goods has increased the demand for LNG refueling in this region. One contract modification executed in 2014 was to provide an additional \$1 million in funding to Clean Energy using funds from a CEC AB 118 grant. The \$1 million brought the contract with Clean Energy to \$1.4 million to provide funding for construction, operation and maintenance of three public access LNG projects. All three Clean Energy LNG sites are positioned near major highway corridors which serve as goods movement conduits for many heavy-duty vehicles in the South Coast and the Coachella Valley Air Basins. The three stations are located as follows: Fontana (San Bernardino County) which is adjacent to the I-10 corridor; Coachella (eastern portion of Riverside County) which is at the junction of Interstate 10 and highway 86, a main thoroughfare to Imperial County; and Perris (western Riverside County) which is adjacent to Interstate 215 and which serves as a thoroughfare to San Diego County.

Two of the three stations, Fontana and Coachella, were completed in 2013 and are now in operation. The Perris station is expected to be commissioned in the first part of 2015. All



Figure 14: LNG Station at Truck Stop Center on Valley Blvd. in Fontana





three stations are located at existing and established conventional truck fueling stops.



The Fontana location also includes CNG  
**Figure 15: LNG Station at Love's Travel Stop on Dillon Road in Coachella**

refueling and is dispensing 45,000 GGE of CNG and 20,000 DGE of LNG per month. Coachella is currently dispensing 36,000 DGE of LNG and completing nearly 1,200 vehicle fueling transactions per month.

The Perris station is expected to have a starting annual throughput of 300,000 DGE of LNG. These three stations will increase the public access LNG facility count by 20% in SCAQMD's jurisdiction and demonstrate the viability of natural gas as an alternative fuel for the goods movement sector.

**Figure 16: LNG Station under Construction at Arco Truck Stop on Cajalco Expressway in Perris**

## 2014 FUNDING & 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 6), 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 SCAQMD Governing Board.

As projects are approved by the SCAQMD 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, 2014.

### 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, 2014, a total of 72 contracts, projects or studies that support clean fuels were executed or amended, as shown in Table 2 (page 28). The major technology areas summarized are (listed in order of funding priority during the CY): hybrid/electric technologies and infrastructure, engine systems, natural gas infrastructure and deployment, hydrogen technology and infrastructure, mobile fuel cell technologies, health impacts studies, fuels and emission studies, and outreach and technology transfer. The distribution of funds based on technology area is shown graphically in Figure 17 (page 26). 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 2014 reporting period are shown below with the total projected project costs:

• SCAQMD Clean Fuels Fund Contribution	\$14,268,944
• Total Cost of Clean Fuels Projects	\$64,666,588

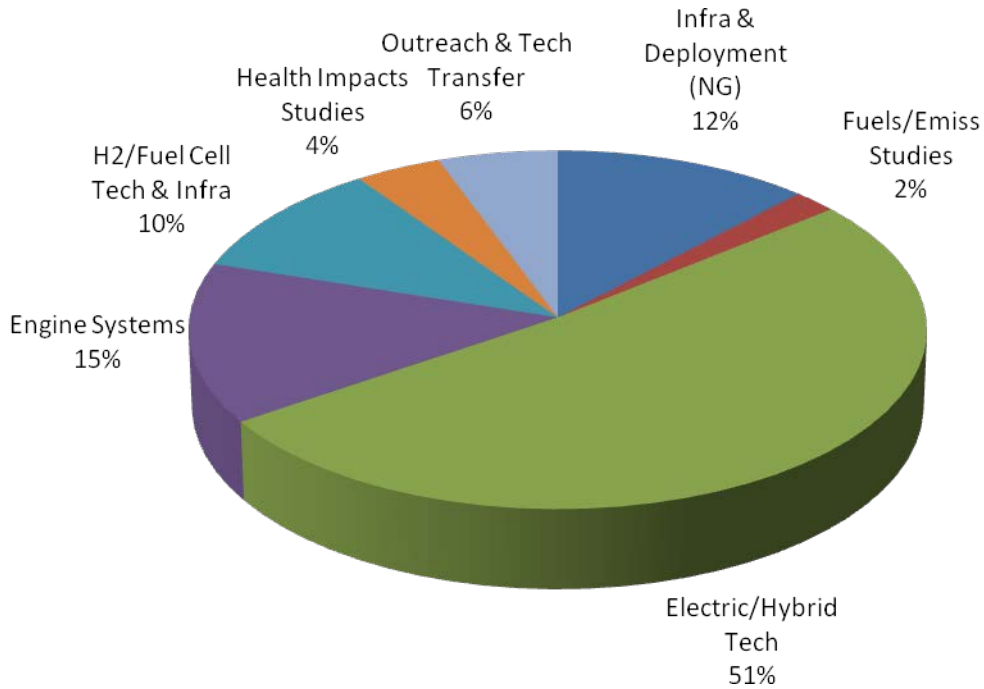
Each year, the SCAQMD Governing Board approves funds to be transferred to the General Fund Budget for Clean Fuels administration. For 2014, the Board transferred \$850,000 for workshops, conferences, co-sponsorships and outreach activities as well as postage, supplies and miscellaneous costs for participation in special conferences. Only the funds committed by December 31, 2014, are included within this report. Any portion of the Clean Fuels Funds not spent by the end of Fiscal Year 2014-15 ending June 30, 2015, 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 2014 totaling \$5,963,707 is listed within Table 3 (page 31).

Appendix B lists the 121 Clean Fuels Fund contracts that were open and active as of January 1, 2015.

For Clean Fuels executed and amended contracts, projects and studies in 2014, the average SCAQMD contribution is approximately 22 percent of the total cost of the projects, identifying that each dollar from the SCAQMD was leveraged with nearly five dollars of outside investment. The typical leverage amount is \$3-\$4 for every \$1 of SCAQMD Clean Fuels funds, but 2014 notably had a couple of significant contracts, significant both in funding and in the impact they hopefully will make in strides toward developing and commercializing clean transportation technologies.

During 2014, the distribution of funds for SCAQMD executed contracts, purchases and contract amendments with additional funding for the Clean Fuels Program totaling approximately \$14.3 million are shown in Figure 17 below.



**Figure 17: Distribution of Funds for Executed Clean Fuels Projects CY 2014 (\$14.3 million)**

Table 2 (page 28) provides a breakdown of these \$14.3 million awards. Table 3 (page 31) provides information on outside funding recognized and received into the Clean Fuels Fund (nearly \$6 million) for contracts executed in CY 2014. Additionally, the SCAQMD continued to seek funding opportunities and Table 4 (page 32) lists the additional \$19,956,690 awarded in 2014 for projects that will be implemented as part of the Clean Fuels Program or which align well or will be complementary to the Clean Fuels Program.

## 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, 2014, 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 “unmodified opinion,” the

highest obtainable. Notably, the SCAQMD has achieved this rating on all prior annual financial audits.

## **Project Funding Detail by Core Technologies**

The 72 new and continuing contracts, projects and studies that received SCAQMD funding in 2014 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, 2014**

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD \$	Project Total \$
<b>Electric/Hybrid Technologies &amp; Infrastructure</b>						
13396	Transportation Power Inc.	Develop & Demonstrate Class 8 Zero-Emission Electric Trucks	04/19/13	12/31/16	375,000	2,285,368
14062	Siemens Industry Inc.	Develop & Demonstrate Catenary Zero Emissions Goods Movement System & Develop & Demonstrate Diesel Catenary Hybrid Electric Trucks	07/14/14	07/13/18	5,500,000	14,780,000
14156	Galpin Motors Inc. (Galpin Ford)	Lease of Two Fusion Energi & One C-Max Energi PHEVs for a Three-Year Period	01/28/14	01/27/17	49,298	49,298
14184	Clean Fuel Connection, Inc.	DC Fast Charging Network Provider	04/04/14	06/30/20	250,000	1,268,000
14222	Odyne Systems, LLC	Develop & Demonstrate Plug-In Hybrid Electric Retrofit System for Class 6 to 8 Trucks	04/24/14	04/23/16	389,000	2,226,571
14224	Complete Coach Works	Develop & Demonstrate Long Range All-Electric Transit Bus	04/24/14	07/30/15	395,000	867,182
14256	National Strategies LLC	Develop & Demonstrate Vehicle-To-Grid Technology	09/05/14	03/04/18	250,000	3,377,689
14323	Selman Chevrolet Company	Lease Two 2014 Chevrolet Volt Extended-Range Electric Vehicles for Three Years	03/28/14	03/27/17	30,932	30,932
15021	Transportation Power Inc.	Upgrade & Demonstrate Two Electric Yard Tractors	07/14/14	12/31/15	75,000	405,000
Various	Various	Install & Upgrade EV Charging Infrastructure (Administer SoCalEV Infrastructure Project)	01/22/14	10/10/14	0	0
Direct Pay	ATVLS, Inc.	Install Electric Vehicle Chargers	TBD	TBD	7,306	7,306
Direct Pay	Clean Fuel Connection, Inc.	Install Electric Vehicle Chargers	TBD	TBD	5,388	5,388
Direct Pay	Croxton Electric	Install Electric Vehicle Chargers	TBD	TBD	6,685	6,685

**Engine Systems**

14364	Cummins Inc.	Develop, Integrate & Demonstrate Ultra-Low Emission Natural Gas Engines for On-Road Heavy-Duty Vehicles	07/14/14	08/20/16	2,061,000	3,869,000
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**Infrastructure and Deployment (NG)**

09308	Trillium CNG	Maintain & Manage SCAQMD's Fast-Fill CNG Refueling Station	06/17/09	11/30/14	54,000	54,000
12851	Clean Energy	Install, Operate & Maintain Three LNG Fueling Stations (Fontana, Coachella & Perris)	10/05/12	12/31/18	1,000,000	3,477,323
14219	City of West Covina	Upgrade CNG Station at City Yard	05/15/14	06/15/17	200,000	618,429
14311	Southern California Gas Company	Construct & Operate CNG Fueling Station in Murrieta for SoCalGas	07/11/14	12/31/17	217,000	1,385,000

**Table 2: Contracts Executed or Amended (w/\$) between January 1 & December 31, 2014**

<b>Contract</b>	<b>Contractor</b>	<b>Project Title</b>	<b>Start Term</b>	<b>End Term</b>	<b>SCAQMD \$</b>	<b>Project Total \$</b>
<b>Infrastructure and Deployment (cont'd)</b>						
15438	United Parcel Service, Inc.	Refurbish & Upgrade Ontario UPS LCNG Infrastructure	12/31/14	06/30/18	246,707	484,535
<b>Hydrogen Technologies &amp; Infrastructure</b>						
13259	Air Products and Chemicals, Inc.	Hydrogen Station Operation & Maintenance for Five Cities Hydrogen Program	03/26/13	03/31/15	90,000	90,000
15020	University of California Irvine	Develop Sampling & Testing Protocols for Analyzing Impurities in Hydrogen	08/13/14	04/12/15	114,500	114,500
15150	Air Products and Chemicals, Inc.	Install & Upgrade Eight Hydrogen Fueling Stations (including SCAQMD's Diamond Bar Station)	10/10/14	04/09/19	1,000,000	17,044,216
15366	EPC LLC	Operate & Maintain Publicly Accessible Hydrogen Fueling Station at SCAQMD Headquarters	10/10/14	09/14/17	0	0
15419	SunLine Transit Agency	Disposition of Dispenser from Electrolyzer Hydrogen Station Demonstration at SCAQMD Headquarters	12/24/14	12/23/15	0	0
Direct Pay	Smart Chemistry Corp.	Conduct Hydrogen Quality Sampling & Analysis at Three Hydrogen Stations (Diamond Bar, Burbank & Newport Beach)	11/19/13	1/19/14	10,350	10,350
Direct Pay	Hydrogen Fueling Station	Additional Support for California Fuel Cell Partnership's Hydrogen Fueling Activities	01/01/14	06/04/14	10,000	127,000
Purchase Order	MKS Instruments	Purchase FTIR to Perform Hydrogen Fuel Quality Testing	08/07/14	1/23/15	91,768	91,768
<b>Mobile Fuel Cell Technologies</b>						
14622	California State University Long Beach Foundation	CSULB CEERS Student Educational Project to Demonstrate Graphene Fuel Cell Catalysts	08/05/14	05/31/15	28,000	28,000
15388	Bevilacqua-Knight Inc.	Participate in California Fuel Cell Partnership for CY 2014 & Provide Support for Regional Coordinator	01/01/14	12/31/14	137,800	1,676,800
<b>Health Impacts Studies</b>						
12865	University of California Los Angeles	Develop Quantitative Cellular Assays for Use in Understanding the Chemical Basis of Air Pollutant Toxicity	06/08/12	07/31/15	319,553	319,553
14171	Southern California Research Center/Allergy & Asthma Associates of Southern California	Risk of Incident Asthma among Children from In-Utero Exposures to Traffic Related Pollutants	09/22/14	03/21/16	99,670	317,119
14172	University of California Irvine	The Relation of Airway & Systemic Oxidative Stress to Particulate Air Pollution Exposures in an Elderly Cohort	02/17/14	08/16/15	159,974	376,368

**Table 2: Contracts Executed or Amended (w/\$) between January 1 & December 31, 2014**

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD \$	Project Total \$
<b>Fuels/Emissions Studies</b>						
13402	University of California Davis-Office of Research	Next Sustainable Transportation Energy Pathways (STEPS) Program	05/02/14	07/01/16	120,000	2,760,000
14162	National Renewable Energy Laboratory	Utilization of Fleet DNA Approach & Capabilities to Provide Vehicle Vocational Analysis in SCAQMD	02/26/14	12/30/15	174,985	199,985
<b>Outreach &amp; Technology Transfer</b>						
12376	University of California Riverside/CE-CERT	Technical Assistance with Alternative Fuels, Biofuels, Emissions Testing & Zero-Emission Transportation Technology	06/13/14	05/31/16	75,000	75,000
12381	Integra Environmental Consulting Inc.	Technical Assistance with Alternative Fuels, Fuel Cells, Emissions Analysis & Aftertreatment Technologies	06/21/12	05/31/16	75,000	75,000
13194	Clean Fuel Connection, Inc.	Technical Assistance with Alternative Fuels, Renewable Energy & EVs, Program-Related Activities for AFVs, Lawn Mower Exchange, Conferences & Outreach	12/07/12	06/30/15	50,000	50,000
14185	Three Squares Inc.	Conduct Education Outreach for the Basin DC Fast Charging Network Project	04/11/14	06/30/15	49,183	49,183
15344	Clean Fuel Connection, Inc.	Technical Assistance with Alternative Fuels, Electric Vehicles, Charging & Fueling Infrastructure & Renewable Energy	09/22/14	09/22/16	60,000	60,000
15369	Breakthrough Technologies Institute, Inc.	Technical Assistance with Low- & Zero-Emission Vehicles, Fuel Cells, Stationary Applications & Emissions Analyses	11/07/14	11/06/16	30,000	30,000
15380	ICF Resources LLC	Technical Assistance with Goods Movement, Alternative Fuels & Zero-Emission Transportation Technologies	12/12/14	12/11/16	30,000	30,000
15415	Gladstein, Neandross & Associates, LLC	Technical Assistance with Alternative Fuels & Fueling Infrastructure, Emissions Analysis & On-Road Sources	11/07/14	11/06/16	60,000	60,000
Transfer	Transfer from Clean Fuels	Participation in California Natural Gas Vehicle Partnership for Fiscal Years 2014-15 & 2015-16	07/11/14	07/11/14	25,000	145,000
Direct Pay	Three Squares, Inc.	Technical Assistance for EV Charging Infrastructure Grant Preparation	02/01/14	02/06/14	15,307	15,307
Direct Pay	Transportation Research Board	Participation for CY 2014 Membership in Transportation Research Board & Support Minority Student Fellows Program	01/01/14	12/31/14	36,500	260,000

**Table 2: Contracts Executed or Amended (w/\$) between January 1 & December 31, 2014**

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD \$	Project Total \$
<b>Outreach &amp; Technology Transfer (cont'd)</b>						
Direct Pay	Various	Cosponsor 22 Conferences, Workshops & Events plus 5 Memberships	01/01/14	12/31/14	294,038	5,462,933

**Table 3: Supplemental Grants/Revenue Received into the Clean Fuels Fund (31) in CY 2014**

Revenue Agreement #	Revenue Source	Project Title	Contractor	SCAQMD Contract #	Award Total \$
#10685	U.S. DOE Clean Cities DE-EE0002545	Refurbish & Upgrade Ontario UPS LCNG Infrastructure	United Parcel Service, Inc.	#15438	150,000
#12152 (Amd #2)	CEC AB 118 Program ARV-10-054	Install Three New LNG Stations	Clean Energy	#12851	1,000,000
#12286	CEC AB 118 Program ARV-10-035	Refurbish & Upgrade Ontario UPS LCNG Infrastructure	United Parcel Service, Inc.	#15438	96,707
#13034	CEC AB 118 Program ARV-11-025	Construct CNG Fueling Station in Murrieta for SoCalGas	Southern California Gas Company	#14311	217,000
#14024 & #15517	CEC AB 118 Program 600-12-011 & 600- 14-003	Develop & Demonstrate Catenary Zero Emissions Goods Movement System	Seimens Industry Inc.	#14062	3,000,000
#14051	CEC AB 118 Program ARV-12-053	Implement South Coast Air Basin DC Fast Charging Network	Clean Fuel Connection, Inc.	#14184	250,000
#14146	Southern California Gas Company	Develop, Integrate & Demonstrate Ultra-Low Emission Natural Gas Engines for On-Road Heavy-Duty Vehicles	Cummins Inc.	#14364	250,000
#15022	CEC 600-13-018	Develop, Integrate & Demonstrate Ultra-Low Emission Natural Gas Engines for On-Road Heavy-Duty Vehicles	Cummins Inc.	#14364	\$1,000,000
<i>Table 3 lists revenue recognized by SCAQMD into the Clean Fuels Fund (31) only if the pass-through contract was executed during the reporting CY (2014).</i>					<b>\$5,963,707</b>



**Table 4: Summary of Federal & State Funding Awarded between Jan. 1 & Dec. 31, 2014**

<b>Awarding Entity or Program</b>	<b>Award Date</b>	<b>Purpose</b>	<b>Contractors</b>	<b>Award Total \$/Fund</b>
CEC AB 118 Program ARV-12-053 (#14051 Amd #1)	Exe 12/15/14	Implement South Coast Air Basin DC Fast Charging Network	Clean Fuel Connection Inc.	420,000 Fund 31 (Clean Fuels)
CEC AB 118 Program ARV-13-026 (#15441)	07/03/14	Implement South Coast Air Basin DC Fast Charging Network	Clean Fuel Connection Inc.	500,000 Fund 31 (Clean Fuels)
U.S. DOE/NETL (#15390)	08/21/14	Develop & Demonstrate Zero Emission Fuel Cell Range Extended Electric & Hybrid Electric Drayage Trucks	U.S. Hybrid, TransPower, CTE, GTI and International Rectifier	9,725,000 Fund 61
CEC	12/05/14 Brd Mtg	Develop and Demonstrate Zero Emission Fuel Cell Range Extended Electric and Hybrid Electric Drayage Trucks	U.S. Hybrid, TransPower, CTE, GTI and International Rectifier	2,400,000 Fund 61
LADWP	12/05/14 Brd Mtg	Develop and Demonstrate Zero Emission Fuel Cell Range Extended Electric and Hybrid Electric Drayage Trucks	U.S. Hybrid, TransPower, CTE, GTI and International Rectifier	1,000,000 Fund 61
San Pedro Bay Ports' Technical Advancement Program	12/05/14 Brd Mtg	Develop and Demonstrate Zero Emission Fuel Cell Range Extended Electric and Hybrid Electric Drayage Trucks	U.S. Hybrid, TransPower, CTE, GTI and International Rectifier	1,133,979 Fund 61
Southern California Gas Company	12/05/14 Brd Mtg	Develop and Demonstrate Zero Emission Fuel Cell Range Extended Electric and Hybrid Electric Drayage Trucks	U.S. Hybrid, TransPower, CTE, GTI and International Rectifier	250,000 Fund 61
CARB/BAR AB 118	12/05/14 Brd Mtg	Implement the Retirement and Replacement Component of the Enhanced Fleet Modernization Program	Foundation for California Community Colleges; Gladstein, Neandross & Associates; and Opus Inspection	1,400,000 Fund 56
U.S. EPA CATI A-00909414-1 (Amd #1)	07/21/14	Install and Test Air Filtration Systems in School Buses and Upgrade and Demonstrate Two Electric Yard Tractors	IQAir & TransPower	500,000 Fund 17
CEC AB 118 ARV-13-056 (#14685)	03/12/14	Support Hydrogen Readiness in Early Market Communities	Bevilacqua-Knight, Inc.	297,460 Fund 55
POLB/City of Long Beach (#14359)	04/04/14 Brd Mtg	Demonstrate Barge-Mounted Emission Control System	Advanced Cleanup Technologies, Inc.	2,063,624 Fund 17
U.S. EPA/ DERA	02/07/14 Brd Mtg	Convert and Demonstrate Two Diesel School Buses to Electric Buses with V2G Capability and Replace One Diesel School Bus with an Electric School Bus	Torrance and Newport-Mesa Unified School Districts	156,000 Fund 33

**Table 4: Summary of Federal & State Funding Awarded between Jan. 1 & Dec. 31, 2014**

Awarding Entity or Program	Award Date	Purpose	Contractors	Award Total \$/Fund
U.S. EPA/ DERA	08/21/14	Replace Diesel School Buses with Electric School Buses	Colton and Los Angeles Unified School Districts	110,627 Fund 33
<p><i>Table 4 provides a comprehensive summary of revenue <u>awarded</u> to SCAQMD during the reporting CY (2014) if it will be considered part of, or complementary to, the Clean Fuels Program, regardless of whether the pass-through contract has been executed.</i></p>				<b>\$19,956,690</b>

## Project Summaries by Core Technologies

The following represents summaries of the contracts, projects and studies executed, or amended with additional dollars, in 2014. 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, cosponsors and their respective contributions, contract term and a description of the projects as required by H&SC Section 40448.5.1(d).

### ***Electric/Hybrid Technologies***

#### **13396: Develop & Demonstrate Class 8 Zero Emission Electric Trucks**

Contractor: Transportation Power Inc.	SCAQMD Cost-Share	\$ 375,000
	Cosponsors	
	California Energy Commission	1,450,364
	San Pedro Bay Ports' Technology Advancement Program	300,000
	Transportation Power Inc.	160,004
Term: 04/19/13 – 12/3/16	Total Cost:	\$ 2,285,368

In October 2012, TransPower was awarded \$1,142,070, as part of a DOE grant, to develop and demonstrate four Class 8 battery electric drayage trucks in real world drayage operations at the Ports of Los Angeles and Long Beach. Subsequent to the award, TransPower received additional funding from CEC and the San Pedro Bay Ports' Technology Advancement Program to develop three more electric drayage trucks for the demonstration. This contract modification is to cost-share the development of the three additional trucks for a total of seven demonstration trucks. In addition, this modification also includes design upgrades to the electric drive system incorporating technology advancements and improvements gained from the operations of earlier prototypes. The upgrades will help to enhance the vehicle performance and operating efficiency as well as to reduce assembly costs, making the vehicles more viable and well-positioned for commercialization.

#### **14062: Develop & Demonstrate Catenary Zero Emissions Goods Movement System & Develop & Demonstrate Diesel Catenary Hybrid Electric Trucks**

Contractor: Siemens Industry Inc.	SCAQMD Cost-Share <i>(partially received as pass-through funds)</i>	\$ 5,500,000
	Cosponsors	
	Port of Long Beach	2,000,000
	Los Angeles County Metropolitan Transportation Authority "Metro"	2,000,000
	Port of Los Angeles China Shipping Settlement	4,000,000
	Siemens Industry Inc.	1,280,000
Term: 07/14/14 – 07/13/18	Total Cost:	\$ 14,780,000

Siemens Industry Inc. (Siemens) has designed and demonstrated a catenary truck technology, eHighway, in Germany on a European truck chassis. For this project, Siemens proposes to bring the eHighway technology to southern California with their partner Volvo and develop and demonstrate a catenary plug-in hybrid electric truck technology. The hybrid drive system will extend the operating range of the truck beyond the all-electric range of the catenary system, enabling the truck to perform regional drayage operations and bridge gaps in catenary infrastructure as it is deployed on a regional level. Siemens and Volvo propose to develop and integrate two Mack Granite Vision diesel hybrid electric class 8 trucks configured to operate on the catenary system. The first truck will be used for integration and testing of the pantograph and electrical hybrid drive and will be evaluated on Siemens catenary test track in Germany. The second truck will leverage the same plug-in hybrid electric architecture being developed by Volvo under a separate SCAQMD project. The vehicle will use Volvo’s current hybrid 150kW electro-mobility propulsion system will be upgraded with a pantograph to operate on the eHighway system.

**14156: Lease of Two Fusion Energi & One C-Max Energi PHEVs for a Three-Year Period**

Contractor: Galpin Motors Inc. (Galpin Ford)	SCAQMD Cost-Share	\$ 49,298
	Cosponsors	
	Federal Tax credit \$3,750 partially offset by Ford lease financing plus California Clean Vehicle Rebate of \$1500 per PHEV	
Term: 01/28/14 01/27/17	Total Cost:	\$ 49,298

The SCAQMD operates a number of alternative fuel vehicles, including electric vehicles, fuel cell vehicles and plug-in hybrid-electric vehicles (PHEVs). The primary objective of having these vehicles as part of the SCAQMD Fleet Demonstration Program is to continue to support the use of zero-emission vehicles. The three Ford PHEVs provide 19 miles all electric range in a five-passenger sedan (Fusions) or hatchback (C-Max), with over 500 miles total range including gasoline.

**14184: DC Fast Charging Network Provider**

Contractor: Clean Fuel Connection, Inc.	SCAQMD Cost-Share <i>(received as pass-through funds)</i>	\$ 250,000
	Cosponsors	
	Clean Fuel Connection, Inc.	25,000
	eVgo	693,800
	Nissan	300,000
Term: 04/04/14 – 06/30/20	Total Cost:	\$ 1,268,800

Clean Fuel Connection, Inc. (CFCI) was selected as the network provider for the 26-site DC fast charging network. CFCI is working in partnership with NRG/eVgo to serve as the installer and network provider. CFCI has installed over 8,000 EVSE since 1999 and is one of the most experienced installers of EVSE in the U.S. The 26 sites will be in addition to NRG/eVgo’s CPUC

settlement of installing 200 DC fast chargers in California and will be integrated into the eVgo network. CFCI will operate the network for five years beyond the date of installation and will provide pay per use and subscription payment models to users. Installation at sites will begin in 2015 and be completed in early 2016. Subsequent to the execution of this contract with CFCI, the CEC issued a Notice of Proposed Award (NOPA) announcing the SCAQMD had been awarded \$500,000 to implement six additional sites to their DC fast charging network and also amended their original award increasing it to a total of \$720,000. CFCI's contract will be amended in 2015 to add these additional funds. Total CEC funding is \$1.22 million for a 26-site network.

#### **14222: Develop & Demonstrate Plug-In Hybrid Electric Retrofit System for Class 6 to 8 Trucks**

Contractor: Odyne Systems, LLC	SCAQMD Cost-Share	\$ 389,000
	Cosponsors	
	California Energy Commission	916,000
	Odyne Systems, LLC	921,000
Term: 04/24/14 – 04/23/16	Total Cost:	\$ 2,226,000

The objectives of this project are to develop and design a retrofit plug-in hybrid electric system for work truck applications, such as bucket trucks, digger derricks, and underground utility trucks. During the two-year period of the project, the Odyne Systems will develop and evaluate concept designs, produce a selected concept, and evaluate one plug-in hybrid-electric medium- and heavy-duty work truck with extended stationary engine-off technology. The one vehicle will be deployed in the South Coast Air Basin. The primary objectives of this project are: 1) to improve specific aspects of the existing system through the use of smaller, lower cost components; 2) to optimize the system and selected powertrain components for high volume production to enhance commercial appeal through lower-cost products and components; 3) to match the size of the power electronics and energy storage device to customer duty cycle and work practice; 4) to quantify improvements in fuel economy and emissions. The project will gather vehicle and component performance data during deployment that will enable the operating cost and environmental impact of the vehicle to be assessed.

#### **14224: Develop & Demonstrate Long Range All-Electric Transit Bus**

Contractor: Complete Coach Works	SCAQMD Cost-Share	\$ 395,000
	Cosponsors	
	U.S. Hybrid	44,500
	EV Grid	27,000
	Complete Coach Works	390,200
Term: 04/24/14 – 07/30/15	Total Cost:	\$ 856,700

Complete Coach Works is one of the largest bus remanufacturing companies in the nation and has undertaken initial development efforts to produce an electric bus for transit applications. Leveraging their previous work, Complete Coach Works will design, develop and demonstrate their third generation electric bus concept in this project. The bus would be built off of a refurbished chassis incorporating significant improvements to the electric drive system. The improvements would be focused on making the bus more competitive with conventional transit buses on the initial purchase cost as well as on operating costs. The drive system is locally

sourced from U.S. Hybrid with a higher power output and the battery pack will be manufactured by EV Grid applying a more power dense lithium ion chemistry to trim system weight and utilizing high-volume cylindrical battery cells to further reduce the production cost. Complete Coach Works is targeting a driving range of 150 miles, which would satisfy the needs of approximately 80% of their customer base and still be a commercially marketable product. The electric bus will be demonstrated in revenue service with different transit agencies in the South Coast Air Basin to evaluate its performance and reliability as well as to quantify its operating cost relative to traditional vehicles in their fleets.

**14256: Develop & Demonstrate Vehicle-To-Grid Technology**

Contractor: National Strategies, LLC	SCAQMD Cost-Share	\$ 250,000
	Cosponsors	
	California Energy Commission	1,473,488
	National Strategies, LLC	1,654,201
Term: 09/05/14 – 03/04/18	Total Cost:	\$ 3,377,689

National Strategies proposed a Vehicle-to-Grid (V2G) Electric School Bus Demonstration Project that seeks to demonstrate if V2G capable school buses can overcome the capital cost barriers associated with EV technology and be financially viable on a total cost-of-ownership basis. In October 2013, the CEC made an award to National Strategies to develop and demonstrate six electric school buses with vehicle-to-grid and vehicle-to-building functionality (V2G/B) in school districts across California. School buses are ideal for V2G/B operation since they typically operate in the morning and afternoon for a few hours but remain parked most of the day. In this proposed project, two of the zero-emission school buses will be demonstrated in the South Coast Air Basin with Torrance Unified School District. National Strategies will convert two type C school buses for Torrance Unified School District that will utilize electric drive systems installed into existing OEM school bus chassis.

**14323: Lease Two 2014 Chevrolet Volt Extended-Range Electric Vehicles for Three Years**

Contractor: Selman Chevrolet Company	SCAQMD Cost-Share	\$ 30,932
	Cosponsors	
	Federal Tax credit \$7,500 partially offset by Chevy lease financing plus CA Clean Vehicle Rebate of \$1500 per PHEV	
Term: 03/28/14 - 03/27/17	Total Cost:	\$ 30,932

The SCAQMD operates a number of alternative fuel vehicle (AFVs), including electric vehicles (EV), fuel cell vehicles (FCVs) and plug-in hybrid-electric vehicles (PHEVs). The primary objective of having these vehicles as part of the SCAQMD’s Fleet Demonstration Program is to continue to support the use of zero emission vehicles. The Chevy Volts provide 38 miles all electric range with about 300 miles total range including gasoline.

**15021: Upgrade & Demonstrate Two Electric Yard Tractors**

Contractor: Transportation Power Inc.	SCAQMD Cost-Share	\$ 75,000
	Cosponsor	330,000
	U.S. EPA FY14 CATI Grant <i>(received as pass-through funds-- but not into Clean Fuels Fund)</i>	
Term: 07/14/14 – 12/31/15	Total Cost:	\$ 405,000

The objectives of this project are to: (i) upgrade two prototype electric yard tractors to reflect lessons learned during a previous demonstration and incorporate Transportation Power Inc.'s TransPower latest ElecTruck™ technology; and (ii) demonstrate the upgraded tractors at container/trailer handling locations in the SCAQMD. During this demonstration, the tractors will be equipped with data logging instruments to record vehicle, drive system and battery system data. This demonstration will help encourage deployment of electric yard tractors and other cargo handling equipment.

**Various: Install & Upgrade EV Charging Infrastructure (Administer SoCalEV Infrastructure Project)**

Contractor: Various	SCAQMD Cost-Share	\$ 0
Term: 08/05/13 – 06/30/15	Total Cost	\$ 0

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. In 2013, the LADWP asked the SCAQMD to administer this project, which was previously awarded \$840,750 by CEC. During that same CY, the SCAQMD executed the first five agreements - Memorandum of Agreement (MOA) - with members of the SoCalEV Regional Collaborative to install as well as upgrade existing public EV charging infrastructure at key Southern California locations. In 2014 the SCAQMD executed another 12 agreements with members of the SoCalEV Regional Collaborative. Data will be collected on charger utilization, charging use patterns, operating costs, electricity used and real world electric range of EVs. The work with all the members will be completed in 2015. (A complete listing of these MOAs can be found in Appendix B-Open Contracts.)

**Direct Pay: Load Testing & Repair of Electric Vehicle Chargers**

Contractor: ATVLS, Inc.	SCAQMD Cost-Share	\$ 7,306
Term: 01/15/14 – 03/07/14	Total Cost	\$ 7,306

This project provides funds for conducting load testing at several sections of the SCAQMD's Headquarters parking lot to determine electrical demand and need to replace or upgrade transformers, electrical panels and circuit breakers as part of a preliminary site assessment to increase the number of electric vehicle chargers onsite. A Clipper Creek Level 2 charger was also replaced in the parking area near the front lobby entrance after two years of service. The warranty on the charger had expired and the charger could not be repaired. This charger had originally been installed under a CEC Reconnect California grant awarded to Clipper Creek to upgrade old electric vehicle chargers to Level 2 chargers with J1772 connectors.

**Direct Pay: Procure Electric Vehicle Chargers**

Contractor: Clean Fuel Connection, Inc.	SCAQMD Cost-Share	\$ 5,388
Term: 02/25/14 – 03/04/14	Total Cost	\$ 5,388

This project provides funds for the demonstration of Level 2 electric vehicle charging infrastructure from several manufacturers including Coulomb Technologies, ECotality, Clipper Creek and Schneider Electric. Clean Fuel Connection, Inc. purchased and installed two Level 2 charging stations in SCAQMD’s parking lot behind Conference Room CC8 to provide additional charging for SCAQMD Board Members and staff as part of SCAQMD’s Fleet Demonstration Program.

**Direct Pay: Install Electric Vehicle Chargers**

Contractor: Croxton Electric	SCAQMD Cost-Share	\$ 6,685
Term: 03/3/14 – 03/4/14	Total Cost	\$ 6,685

This project provides funds for the demonstration of Level 2 electric vehicle charging infrastructure from several manufacturers including Coulomb Technologies, ECotality, Clipper Creek and Schneider Electric. Croxton Electric installed two Level 2 charging stations in the SCAQMD’s parking lot behind Conference Room CC8 to provide additional charging for SCAQMD Board Members and staff as part of SCAQMD’s Fleet Demonstration Program.

**Engine Systems**

**14364: Develop, Integrate & Demonstrate Ultra-Low Emission Natural Gas Engines from On-Road Heavy-Duty Engines**

Contractor: Cummins Inc.	SCAQMD Cost-Share <i>(partially received as pass-through funds)</i>	\$ 2,061,000
	Cosponsor	
	Cummins Inc.	1,808,000
Term: 07/14/14 – 08/20/16	Total Cost:	\$ 3,869,000

The objective of this project is to develop, integrate and demonstrate a natural gas engine suitable for on-road Class 8 heavy-heavy duty vehicle applications. The emissions targets are 0.02 g/bhp-hr NO<sub>x</sub>, 0.01 g/bhp-hr PM, 0.14 g/bhp-hr NMHC, and 15.5 g/bhp-hr CO or lower, as measured using the U.S. EPA heavy-duty engine certification test procedure. Ammonia emissions will also be measured and methods to attain 10 ppm or lower are to be incorporated in the engine design. In addition, the engine design shall achieve minimal, if any, fuel economy penalties compared to similar 2010 diesel engines.

**Infrastructure & Deployment**

**09308: Maintain & Manage SCAQMD’s Fast-Fill CNG Refueling Station**

Contractor: Trillium CNG	SCAQMD Cost-Share	\$ 54,000
Term: 06/17/09 – 11/30/14	Total Cost:	\$ 54,000



In late 2014, the SCAQMD Board authorized execution of a consecutive contract with Trillium CNG to ensure continued operation of the public access CNG station at SCAQMD headquarters. Concurrently, the Board approved the release of an RFP to solicit bids from contractors interested in assuming ownership and improving the now 12 year old CNG refueling facility. This contract, originally executed in 2009 with Trillium CNG (formerly Pinnacle), was allowed to expire so a new interim contract could be negotiated with Trillium CNG. The CNG station is currently operating without interruption and the RFP for a new owner/operator has closed and proposals are being evaluated. This station currently dispenses about 14,000 GGE/month and fuels about 2000 vehicles per month. Approximately 80% of the fuel dispensed is to non-SCAQMD vehicles.

**12851: Install, Operate & Maintain Three LNG Fueling Stations (Fontana, Coachella & Perris)**

Contractor: Clean Energy	SCAQMD Cost-Share <i>(received as pass-through funds)</i>	\$ 1,000,000
	Cosponsor	
	Clean Energy	2,477,323
Term: 10/05/12 - 12/31/18	Total Cost:	\$ 3,477,323

In late 2011 the SCAQMD received and executed a \$2.6 million grant from CEC after applying for funding under AB 118 Program PON-09-006 for multiple natural gas stations. This grant was subsequently amended in 2013 and 2014. This modification executed in 2014 provides an additional \$1 million to Clean Energy for three public access LNG projects. The Fontana and Coachella stations were both new stations completed in 2013 and are now in operation. Fontana adds LNG fueling capabilities to an existing conventional truck stop and is dispensing 45,000 GGE CNG and 20,000 DGE LNG per month. Coachella is designed to support heavy-duty trucks off Interstate 10 and has also undergone site improvements. Coachella is currently dispensing 36,000 DGE of LNG and completing 1,150 vehicle fueling transactions per month. The Perris station, which is expected to be commissioned in the first quarter of 2015, will be a new public access LNG fueling station established at an existing Arco Truck Stop and is expected to have a starting annual throughput of 300,000 DGE.

**14219: Upgrade CNG Station at City Yard**

Contractor: City of West Covina	SCAQMD Cost-Share	\$ 200,000
	Cosponsors	
	MSRC/AB 2766 Discretionary Fund	300,000
	City of West Covina	118,429
Term: 05/15/14 – 06/15/17	Total Cost:	\$ 618,429

The City of West Covina will upgrade the CNG station located at their West Covina City Yard. Upgrading the system will include the removal of the existing inoperable compressor with duplex compressors and controls, new storage vessels, dispensers and all associated electrical and mechanical equipment. The City has 15 natural gas vehicles, comprised of 13 trucks and vans and

2 buses. Nearby public agencies including several cities and school districts will refuel their natural gas fleets once the station upgrades are complete.

**14311: Install & Maintain CNG Fueling Station in Murrieta for SoCalGas**

Contractor: Southern California Gas Company	SCAQMD Cost-Share <i>(received as pass-through funds)</i>	\$ 217,000
	Cosponsor	
	Southern California Gas Company	1,168,000
Term: 07/11/14 - 12/31/17	Total Cost:	\$ 1,385,000

The SCAQMD received a CEC grant under AB 118 Program PON-11-602 to assist the Southern California Gas Company to install a new public/private access CNG station located at the Southern California Gas Company facility in Murrieta. This station will be positioned near the junction of the I-15 and I-215 freeways. The station will serve the needs of the SoCalGas’s growing natural gas-powered vehicle fleet as well incentivize local fleets to purchase natural gas powered vehicles, e.g. school districts, water agencies and municipal fleets, as well as provide fueling for vehicles used in goods movement. The facility will include a 600 scfm compressor capable of fueling at 5 GGE/minute as well as 41,000 scf of storage and the public dispenser will include two hoses rated at 3600 psi, a universal card reader and will have 24/7 accessibility.

**15438: Refurbish & Upgrade UPS Ontario LCNG Infrastructure**

Contractor: United Parcel Service, Inc.	SCAQMD Cost-Share <i>(received as pass-through funds)</i>	\$ 246,707
	Cosponsor	
	United Parcel Service, Inc.	237,828
Term: 12/31/14 – 06/30/18	Total Cost:	\$ 484,535

The United Parcel Service, Inc. (UPS) LCNG station in Ontario, California, was first established in 1997 and continues to provide CNG and LNG refueling to many vehicles, including an expanded fleet of UPS LNG-powered heavy-duty vehicles. The station is located near the Ontario International Airport and is adjacent to both the SR-60 and I-15 freeways, providing a convenient and established source of both CNG and LNG fuel to a wide variety of NGVs and fleets that regularly operate or pass through this region. Nearly 900,000 DGE of LNG and 400,000 DGE CNG are dispensed annually from this facility with demand of both fuel types expected to increase in the near future. SCAQMD applied for and was awarded infrastructure funding through CEC’s AB 118 Program as well as DOE’s Clean Cities Program for this project. The \$96,707 from CEC and \$150,000 from DOE were recognized into the Clean Fuels Fund.

**Hydrogen Technology and Infrastructure**

**13259: Hydrogen Station Operation & Maintenance for Five Cities Hydrogen Program**

Contractor: Air Products and Chemicals, Inc.	SCAQMD Cost-Share	\$ 90,000
Term: 03/26/13 – 03/31/15	Total Cost:	\$ 90,000

SCAQMD embarked on an ambitious project to demonstrate hydrogen fueling and hydrogen ICE vehicles throughout the South Coast Air Basin. In 2004, SCAQMD also awarded a contract to Air Products and Chemicals, Inc. (APCI) to build hydrogen stations at the Five Cities sites (Burbank, Ontario, Riverside, Santa Ana and Santa Monica), which included three electrolyzer stations and two mobile fueling stations. The contract for operation and maintenance was extended to March 31, 2015, to provide funding for operation and maintenance of the Riverside, Santa Ana and Santa Monica stations through mid-2014, closing costs for the Ontario station through 2013, and closing and removal of hydrogen fueling equipment at Riverside and Santa Monica in early 2015.

### **15020: Develop Sampling & Testing Protocols for Analyzing Impurities in Hydrogen**

Contractor: University of California Irvine	SCAQMD Cost-Share	\$ 114,500
	Cosponsors	
	AirUCI previously installed analytical instruments	In-kind
Term: 08/13/14 - 04/12/15	Total Cost:	\$ 114,500

Proper codes and standards are essential for the commercial deployment of hydrogen and fuel cell technologies. The SAE J2719 fuel quality standard has been adopted for hydrogen fuel quality; however, testing protocols, along with equipment that can measure hydrogen fuel quality at those levels, need to be assessed. AirUCI will conduct an evaluation of current protocols and propose enhanced protocols as well as develop and implement method(s) to identify and quantify trace contaminants present in hydrogen fuel at hydrogen vehicle fueling stations located within the South Coast Air Basin.

### **15150: Install or Upgrade Eight Hydrogen Fueling Stations throughout SCAB (including SCAQMD's Diamond Bar Hydrogen Station)**

Contractor: Air Products and Chemicals, Inc.	SCAQMD Cost-Share	\$ 1,000,000
	Cosponsors	
	California Energy Commission PON-09-608	11,231,733
	Air Products and Chemicals, Inc.	4,812,483
Term: 10/10/14 - 04/09/19	Total Cost:	\$ 17,044,216

On November 16, 2010, the California Energy Commission released a revised Notice of Proposed Award (NOPA) recommending funding for eight projects that will develop hydrogen fueling infrastructure within the South Coast Air Basin. Additional funds were needed to offset high initial costs and investment for production and distribution of hydrogen for these projects so the SCAQMD stepped in to cost-share these projects. The eight stations are strategically located and will play a significant role by providing hydrogen in Southern California in areas with high vehicle densities. The first station at SCAQMD Headquarters in Diamond Bar will serve as the model for the other modularly constructed delivered-hydrogen stations and will accept major credit cards.

**15366: Operate & Maintain Publicly Accessible Hydrogen Fueling Station at SCAQMD Headquarters**

Contractor: EPC LLC	SCAQMD Cost-Share	\$ 0
Term: 10/10/14 - 09/14/17	Total Cost:	\$ 0

EPC LLC entered into a license agreement to operate SCAQMD’s new hydrogen fueling station in Diamond Bar. The license allows EPC to assign or sublet with SCAQMD’s written permission; Air Products and Chemicals, Inc. will be providing equipment maintenance under their contract #15150 in coordination with EPC. EPC LLC obtained all permits for construction, maintenance and operation and will be operating the station for three years, including installation and operation of the point-of-sale (POS) credit card system.

**15419: Disposition of Dispenser from Electrolyzer Hydrogen Station Demonstration at SCAQMD Headquarters**

Contractor: SunLine Transit Agency	SCAQMD Cost-Share	\$ 0
	Cosponsor	
	Sunline Transit Agency	In-kind
Term: 12/24/14 - 12/23/15	Total Cost:	\$ 0

At the end of the useful life of the original Stuart Energy electrolysis-generated hydrogen fueling station at SCAQMD, Hydrogenics decommissioned the station and removed all the obsolete equipment under contract #10061. SunLine Transit has the only known remaining identical FTI hydrogen dispenser in our region at their hydrogen fueling station and it requires spare parts in order to continue operation until their station can be upgraded. SunLine Transit agreed to indemnify SCAQMD and provided labor and equipment to relocate the dispenser to their station.

**Direct Payment: Conduct Hydrogen Quality Sampling & Analysis at Three Hydrogen Stations (Diamond Bar, Burbank and Newport Beach)**

Contractor: Smart Chemistry Corporation	SCAQMD Cost-Share	\$ 10,350
Term: 11/19/13 – 01/19/14	Total Cost:	\$ 10,350

The SCAQMD maintains a hydrogen station at its Headquarters in Diamond Bar, and every few years there is a need to conduct sampling and analysis of particulates and gaseous content in the hydrogen fuel. Smart Chemistry is one of the few qualified independent laboratories that can perform sampling and analysis of hydrogen gas streams to the low levels SAE J2719. Smart Chemistry first assisted SCAQMD back in 2008 with performing gas sampling and chemical analysis of the electrolyzer-based hydrogen fueling station. Additionally, in 2014 the SCAQMD also tasked Smart Chemistry with sampling and analysis at the Newport Beach and Burbank hydrogen stations, which are scheduled for upgrades to begin retail sales of hydrogen sometime in 2015-16. The work conducted was for determining hydrogen purity in order to present to the various OEMs assuring them the quality met the SAE J2719 standards.

**Direct Pay: Additional Support for California Fuel Cell Partnership's Hydrogen Fueling Activities**

Contractor: Hydrogen Fueling Station	SCAQMD Cost-Share	\$ 10,000
	Cosponsors	
	Several automotive and government members	117,000
Term: 01/01/14 - 06/04/14	Total Cost:	\$ 127,000

The successful passage of AB 8, which dedicates funding for hydrogen infrastructure, was the result of the efforts of many entities including outreach ride-and-drive activities by CaFCP staff and member organizations. This additional support will continue to provide hydrogen fueling for CaFCP outreach activities until the new West Sacramento and SCAQMD hydrogen fueling stations are operational.

**Purchase Order: Purchase FTIR to Perform Hydrogen Fuel Quality Testing**

Contractor: MKS Instruments	SCAQMD Cost-Share	\$ 91,768
Term: 08/07/14 – 01/23/15	Total Cost:	\$ 91,768

Proper codes and standards are essential for the commercial deployment of hydrogen and fuel cell technologies. The SAE J2719 fuel quality standard has been adopted for hydrogen fuel quality; however, testing protocols, along with equipment that can measure hydrogen fuel quality at those levels, need to be assessed. The fuel quality required by SAE J2719 must be quantified at the vehicle-fueling station interface and a determination made as to how the presence of small amounts of contaminants may affect the performance and durability of proton exchange membrane (PEM) fuel cells. Current analyses of hydrogen fuel quality have to be enhanced or developed for approximately half of the fuel cell specifications. SCAQMD laboratory staff have investigated the applicability of various instruments and determined a purpose-designed FTIR gas analyzer for measuring certain contaminants within hydrogen fuel would be most cost-efficient. The equipment cost includes software, operational calibration recipes and training. A significant cost savings is realized by the purchase of this equipment. If this equipment were not acquired, separate analyses would have to be developed for sampling of acid halides (no known method for halogens such as chlorine or bromine), formaldehyde (HPLC analysis for formaldehyde at four hours per sample), and ammonia (impinger sampling and IC analysis for ammonia at four hours). Halogen gas sampling and analysis has yet to be scoped. This equipment will act as the cornerstone for analyzing hydrogen fuel purity.

**Mobile Fuel Cell Technologies**

**14622: CSULB CEERS Student Education Project to Demonstrate Graphene Fuel Cell Catalysts**

Contractor: California State University Long Beach Foundation	SCAQMD Cost-Share	\$ 28,000
Term: 08/05/14 – 05/31/15	Total Cost:	\$ 28,000

The Center for Energy and Environmental Research and Services (CEERS) at the California State University Long Beach (CSULB) proposed conducting a feasibility study

of iodine-edged graphene catalysts for Proton Exchange Membrane Fuel Cell (PEMFC). The goal is to obtain the performance of these catalysts under operating fuel cell conditions and to understand how these catalysts have improved properties versus traditional Platinum (Pt) catalysts. The motivation for this study was to find an ideal catalyst that is dramatically less expensive and has improved durability and performance than pure Pt for PEMFC.

**15388: Participate in California Fuel Cell Partnership for CY 2014 & Provide Support for Regional Coordinator**

Contractor: Bevilacqua-Knight, Inc.	SCAQMD Cost-Share	\$ 137,800
	Cosponsors	
	8 automakers; 5 government agencies; 1 fuel cell provider, and 9 associate and 14 affiliate members	1,927,200
Term: 01/01/14 - 12/31/14	Total Cost:	\$ 2,065,000

In April 1999, the California Fuel Cell Partnership (CaFCP) was formed with eight members; SCAQMD joined and has participated since 2000. The CaFCP and its members are demonstrating and deploying 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. (BK) for their portion of the CaFCP’s administration. In 2014, the SCAQMD Board contributed \$87,800 for membership and up to \$50,000, along with four cubicles at SCAQMD Headquarters, to provide support for the CaFCP Regional Coordinator.

**Health Impacts Studies**

**12865: Develop Quantitative Cellular Assays for Use in Understanding the Chemical Basis of Air Pollutant Toxicity**

Contractor: University of California Los Angeles (UCLA)	SCAQMD Cost-Share	\$ 319,553
Term: 06/08/12 – 07/31/15	Total Cost:	\$ 319,553

The objective of this research is to develop a biological mechanism-based analytical procedure to characterize the toxicity air pollutants. The study is developing and characterizing a standard in quantities sufficient to be employed in subsequent toxicity analyses of vehicle emissions and ambient pollutants. UCLA is working with researchers at the University of California Riverside Center for Environmental Research and Technology (UCR/CE-CERT) to collect a large quantity of diesel exhaust, including both particulate and vapor phase, from a well-characterized engine using low-sulfur fuel as the standard. Quantitative dose response toxicity assays can then be conducted with, for example, emissions from advanced technology engines to compare with results from assays using the standard diesel emissions. This will provide a measure of the relative toxic potency of vehicle emissions that can be directly compared in standard assays.

**14171: Risk of Incident Asthma among Children from in-Utero Exposures to Traffic Related Pollutants**

Contractor: Southern California Research Center/Allergy & Asthma Associates of Southern California	SCAQMD Cost-Share	\$ 99,670
	Cosponsor	
	BP	217,449
Term: 09/22/14 – 03/21/16	Total Cost:	\$ 317,119

This project will estimate the association of traffic exposure during pregnancy and diagnosis of asthma during childhood. This study is among the first to evaluate potential risk of exposures near the residence, work, and in-vehicle travel during a vulnerable time of immune system development. The project uses a case control study design. The subjects with asthma are recruited from patients in a large medical practice focusing on asthma. Historical data are available including date of birth, residence history, demographic variable, and asthma severity and control. Control subjects matched for characteristics such as age, gender and ethnicity are being recruited from general pediatric clinics, preschools and other venues. The goal is to recruit 1,000 cases and an equal number of matched controls. Traffic-related exposures during pregnancy are estimated based on residence and work locations and on commute patterns. Markers of traffic emissions include NO, NO<sub>2</sub>, CO, PM<sub>2.5</sub> and ultrafine particles. Both dispersion models of nearby traffic emissions as well as regional air monitoring data will be employed. Additionally, a model developed under a previous research project will be used to estimate exposures to traffic pollutants during commuting times.

**14172: The Relation of Airway & Systemic Oxidative Stress to Particulate Air Pollution Exposures in an Elderly Cohort**

Contractor: University of California Irvine	SCAQMD Cost-Share	\$ 159,974
	Cosponsor	
	BP	216,394
Term: 02/17/14 – 08/16/15	Total Cost:	\$ 376,368

This project will be accomplished in coordination with a study funded by the National Institutes of Health on the health effects of fine particulate exposures. It includes weekly measurements of air pollutants and cardiovascular and respiratory symptoms in a group of 120 elderly subjects living in the South Coast Air Basin. Half of the subjects reside in Los Angeles, and half reside in Anaheim. The measurements are taken over two six-week periods, one in the cool season and one in the warm season. The current project adds measures for markers of oxidative stress in the breath and in the blood of the subjects. About half of the subject data have been collected during the first year of the project. The analysis will determine which pollutants are associated with specific respiratory and cardiovascular health outcomes. It is hypothesized that oxidant pollutants, such as ozone and secondary organic aerosols, which include oxidized organic substances emitted from fuel combustion associated with particulate matter, are responsible for respiratory effects. It is further hypothesized that cardiovascular effects and changes in blood markers are associated with freshly emitted traffic-related organic chemicals in particulate matter.

## Fuels/Emissions Studies

### 13402: Next Sustainable Transportation Energy Pathways (STEPS) Program

Contractor: University of California Davis-Office of Research	SCAQMD Cost-Share	\$ 120,000
	Cosponsors	
Term: 05/02/14 - 07/01/16	Total Cost:	\$ 2,760,000

### 13402: Next Sustainable Transportation Energy Pathways (STEPS) Program

Contractor: University of California Davis/Institute of Transportation Studies	SCAQMD Cost-Share	\$ 120,000
	Cosponsors	
	20 organizations from energy, automotive, and government sectors	2,640,000
Term: 05/02/14 - 07/01/16	Total Cost:	2,760,000

The University of California Davis/Institute of Transportation Studies is continuing a multi-year Next Sustainable Transportation Energy Pathways (NextSTEPS) Program to develop the theory, tools and methods for self-consistent and transparent comparisons of promising alternative energy and vehicle pathways, and to apply these tools and methods in comparative assessments of transportation energy pathways. Increased analysis of shale oil and gas will be added and models for hydrogen, electricity and biofuels will be further refined. SCAQMD identified four key subject areas for inclusion in this multi-year program: 1) Transition Scenarios for Alternative Fuels and Vehicles in California; 2) Consumer Behavior and Vehicle Choice: Longitudinal Tracking; 3) Best Policy and Incentive Strategies; and 4) Low Carbon Options for Non Light-Duty Subsectors.

### 14162: Utilization of Fleet DNA Approach and Capabilities to Provide Vehicle Vocational Analysis in SCAQMD

Contractor: National Renewable Energy Laboratory	SCAQMD Cost-Share	\$ 174,985
	Cosponsor	
	National Renewable Energy Laboratory	25,000
Term: 02/26/14 – 12/30/15	Total Cost:	\$ 199,985

The National Renewable Energy Laboratory (NREL) is collecting and analyzing data in the SCAQMD’s jurisdiction to match powertrains and advanced technology with duty cycles of medium- and heavy-duty trucks. Vehicle duty cycle data will be collected from specific fleet vocations, chosen primarily by their contribution to the medium- and heavy-duty vehicle



emissions inventory. This study will provide information to optimize deployment of advanced vehicle technology in order to maximize emission reductions and fuel economy.

### **Outreach and Technology Transfer**

#### **12376: Technical Assistance with Alternative Fuels, Biofuels, Emissions Testing & Zero-Emission Transportation Technology**

Contractor: University of California Riverside/CE-CERT	SCAQMD Cost-Share	\$ 75,000
Term: 06/13/14 – 05/31/16	Total Cost:	\$ 75,000

SCAQMD seeks to implement aggressive programs to develop and demonstrate pre-commercial technologies for low- and zero-emission vehicles and equipment, alternative fuels, and renewable energy sources. Due to constant and rapid changes in technologies and the sheer breadth of potential projects, SCAQMD supplements in-house technical resources with outside expertise and assistance to evaluate and implement these demonstration projects. The College of Engineering/Center for Environmental Research and Technology (CE-CERT) is a research center at University of California Riverside dedicated to research on air quality and energy efficiency with approximately 120 investigators including 30 Ph.D. level researchers. CE-CERT will provide technical expertise to evaluate a broad range of emerging technologies in alternative and/or renewable fuels and vehicles as well as to conduct air pollution formation and control studies.

#### **12381: Technical Assistance with Alternative Fuels, Fuel Cells, Emissions Analysis & Aftertreatment Technologies**

Contractor: Integra Environmental Consulting Inc.	SCAQMD Cost-Share	\$ 75,000
Term: 06/21/12 – 05/31/16	Total Cost:	\$ 75,000

External expertise is needed to augment in-house expertise and assist staff in technical reviews of emission inventories, goods movement and off-road sources. Integra Environmental Consulting, Inc. was selected to provide technical assistance with emission inventories, goods movement sector analysis and off-road sources, especially related to availability and commercialization of near-zero and zero emission vehicles and equipment.

#### **13194: Technical Assistance with Alternative Fuels, Renewable Energy & EVs, Program Related Activities for AFVs, Lawn Mower Exchange, Conferences & Outreach**

Contractor: Clean Fuel Connection, Inc.	SCAQMD Cost-Share	\$ 50,000
Term: 12/07/12 – 06/30/15	Total Cost:	\$ 50,000

SCAQMD relies on expert input, consultation and support to manage a number of programs conducted under the Clean Fuels Program and incentive programs. Clean Fuel Connection, Inc. (CFCI) is providing technical assistance with alternative fuels, renewable energy and electric vehicles to promote, assess, expedite and deploy the development and demonstration of advanced, low- and zero-emissions mobile and stationary technologies. This modification to

increase available funds under this existing Contract is for administrative support to enable the range of activities involved in implementing the Clean Fuels Program and associated complimentary programs as needed. Support is necessary to enhance or expand existing program-related activities associated with performing or meeting program objectives such as alternative fuel vehicles (AFVs) demonstration programs, the lawn mower exchange program, participation in technical conferences and other outreach activities.

**14185: Conduct Education Outreach for the Basin DC Fast Charging Network Project**

Contractor: Three Squares, Inc.	SCAQMD Cost-Share	\$ 49,183
Term: 04/11/14 – 10/31/16	Total Cost:	\$ 49,183

Three Squares, Inc. (TSI) was selected to conduct education outreach for the DC fast charging network as each of the 26 sites were installed. TSI is an environmental consulting firm with extensive experience working with advanced technology, vehicle manufacturers and emission control technology providers. Education outreach components and social media campaign for users of the DC fast charging network will include information on the benefits of driving plug-in electric vehicles (PEVs) and having public fast charging in their communities, how to use DC fast chargers, and a list of available incentives for PEVs and infrastructure. Sites will be installed in 2015 and completed in early 2016. TSI will also produce a best practices guidelines document on education outreach and messaging, based on survey data and web traffic from network users.

**15344: Technical Assistance with Alternative Fuels, Electric Vehicles, Charging and Fueling Infrastructure and Renewable Energy**

Contractor: Clean Fuel Connection, Inc.	SCAQMD Cost-Share	\$ 60,000
Term: 09/22/14 – 09/22/16	Total Cost:	\$ 60,000

Clean Fuel Connection, Inc. (CFCI) will provide technical and administrative support for development and demonstration of advanced, low- and zero-emission mobile and stationary technologies for the Clean Fuels Program and various complementary incentive programs. CFCI's technical expertise and support enhances existing program-related activities associated with performing or meeting program objectives.

**15369: Technical Assistance with Low- and Zero-Emission Vehicles, Fuel Cells, Stationary Applications and Emissions Analyses**

Contractor: Breakthrough Technologies Institute, Inc.	SCAQMD Cost-Share	\$ 30,000
Term: 11/07/14 – 11/06/16	Total Cost:	\$ 30,000

At its December 6, 2013 meeting, the Board approved RFP #P2014-10 to solicit proposals for technical assistance for the Clean Fuels Program and implementation of various incentive funding programs. The RFP solicited statements of qualifications from individuals and organizations potentially capable of providing technical assistance in a variety of areas to support staff activities. The RFP sought companies or individuals to provide assistance in preparation of AQMP control measures; assessment of zero-emission and goods movement technologies; technical assistance for feasibility studies of stationary and mobile emission control technologies;

emissions assessment of new alternative fuel technologies; evaluation of innovative emissions control systems; assessment of economic, regulatory and technical barriers to the commercialization of clean fuels and advanced technologies; and to implement various incentive programs. Contracts with five technical experts including Breakthrough Technologies Institute were executed to provide technical assistance and outreach support. Breakthrough Technologies Institute is providing technical assistance with low- and zero-emission vehicles, fuel cells, stationary applications and emissions analyses. The team at Breakthrough Technologies Institute has a combined professional experience and proven expertise of over 80 years in the areas of alternative fuels, low- and zero-emission technologies, emission controls and federal policies and state regulations.

**15380: Technical Assistance with Goods Movement, Alternative Fuels and Zero-Emission Transportation Technologies**

Contractor: ICF Resources LLC	SCAQMD Cost-Share	\$ 30,000
Term: 12/12/14 – 12/11/16	Total Cost:	\$ 30,000

This contract is one of the five technical experts awarded funding as a result of RFP #P2014-10 which solicited proposals for technical assistance for the Clean Fuels Program and implementation of various incentive funding programs. ICF International is providing technical assistance with goods movement technologies, alternative fuels and zero-emission transportation technologies. ICF is a leading technology firm with over 40 years of experience. 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.

**15415: Technical Assistance with Alternative Fuels and Fueling Infrastructure, Emissions Analysis and On-Road Sources**

Contractor: Gladstein, Neandross & Associates, LLC	SCAQMD Cost-Share	\$ 60,000
Term: 11/07/14 – 11/06/16	Total Cost:	\$ 60,000

This contract is another one of the five technical experts awarded funding as a result of RFP #P2014-10 which solicited proposals for technical assistance for the Clean Fuels Program and implementation of various incentive funding programs. Gladstein, Neandross & Associates, LLC (GNA) is providing technical expertise with alternative fuels and fueling infrastructure, emission analysis and on-road sources. GNA has partnered with energy, transit, waste management and goods movement companies to develop projects such as the use of LNG in cargo handling equipment at the Ports of Los Angeles and Long Beach, evaluation of the feasibility of utilizing LNG in the Ports' yard equipment and the development of strategies to reduce emissions from construction and operations of the proposed LNG import terminal.

**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: 07/11/14 – 07/11/14	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 July 2014 the SCAQMD approved \$25,000 for the SCAQMD’s participation in the Steering Committee for the next two years.

**Direct Pay: Technical Assistance for EV Charging Infrastructure Grant Preparation**

Contractor: Three Squares, Inc.	SCAQMD Cost-Share	\$ 15,306
Term: 01/01/14 – 02/06/14	Total Cost	\$ 15,306

CEC released PON-13-606 offering funding for EV charging infrastructure, with projects due by February 4, 2014. SCAQMD retained the expertise of Three Squares, Inc. to provide technical assistance in developing, preparing and submitting a grant proposal to expand the South Coast Air Basin DC Fast Charging Network. Three Squares, Inc. worked with staff on writing the project narrative, gathering the required CEQA and health impacts documentation and site selection. On July 3, 2014, CEC issued a NOPA announcing the SCAQMD had been awarded \$500,000 to implement six additional sites to their DC fast charging network. CEC later agreed to award an additional \$420,000 to their original grant for the first 20 DC fast charging sites for a revised award of \$720,000. Total CEC funding for the 26-site network is \$1.22 million.

**Direct Pay: Participation for CY 2014 Membership in Transportation Research Board and Support of Minority Student Fellows Program**

Contractor: Transportation Research Board	SCAQMD Cost-Share	\$ 36,500
	Cosponsors	
	SCAQMD’s Legislative & Public Affairs Office	32,500
	Core Program Participating Members	191,000
Term: 01/01/14 – 12/31/14	Total Cost	\$ 260,000

In 2014 the SCAQMD supported the Transportation Research Board (TRB) by participating as a member and sponsoring TRB’s 2014 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 22 Conferences, Workshops & Events plus 5 Memberships**

Contractor: Various	SCAQMD Cost-Share	\$ 294,038
	Cosponsors	
	Various	5,168,895
Term: 01/01/14 – 12/31/14	Total Cost	\$ 5,462,933

The SCAQMD regularly participates in and hosts or cosponsors conferences, workshops and events. These funds provide support for the 22 conferences, workshops and events sponsored throughout 2014 as follows: NAFTA NEXT Summit in April; Coordinating Research Council's 2014 Vehicle Emissions Workshop in March; UCR's 2014 Solar Energy Conference in February and 2014 PEMS Conference in April; UCI's ICEPAG 2014 in April; California Science Center Foundation's Foundation Fair Awards in April; JLP's 2014 Climate Day; EPRI's 2014 Plug-In Conference in July; The Women in Green Forum in August; CleanTechOC's 2014 Symposium: Stepping on the Gas in June; 2014 ACT Expo in Long Beach in May as well as a booth at the ACT Expo; the 7<sup>th</sup> Symposium on Global Emerging Environmental Challenges and Government in July; U.S. EPA's West Coast Collaborative Meeting in San Francisco in September; the 2014 Santa Monica AltCar Expo in August; 2014 GloSho in September; the Southern California Energy Summit in Palm Springs in October; CleanTechOC's 2014 Conference & Expo in October; the 2014 LA Auto Show, the Fuel Cell Seminar in November; Calstart's 2014 Annual Meeting & Blue Sky Awards in November; and Clean Fuel Advisory Group Participation Fees for February and August retreats. Additionally, for 2014 five memberships were renewed for participation in the PEV Collaborative, the Fuel Cell & Hydrogen Energy Association, the California Hydrogen Business Council, the Electric Drive Transportation Association, and the Air & Waste Management Association.

## PROGRESS AND RESULTS IN 2014

### 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<sub>x</sub> technologies and clean energy alternatives, such as fuel cells, solar power and other renewable energy systems.

Table 5 (page 61) provides a list of 46 projects and contracts completed in 2014. 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.

#### Demonstrate Battery Electric Heavy-Duty Trucks

CARB classified diesel exhaust as a known carcinogen in 1990 and as a toxic air contaminant in 1998, and the ports at Los Angeles and Long Beach are implementing measures to combat diesel emissions from goods movement activities. One of the major sources of criteria pollutant emissions is from diesel-fueled heavy-duty trucks. There are several measures that can be used to reduce emissions from heavy-duty trucks, such as conversion to clean fuels, hybridization and electrification. The Battery Electric Heavy-Duty Trucks project is an example of how the electrification of a drayage truck to reduce emissions from diesel-fueled trucks was accomplished.

A zero emission battery-electric drive system was installed by TransPower into two Class 8 truck tractors. Each drive system was intended to utilize network control architecture to control modular components, including high-power drive motors and inverters along with electrically-driven accessories, powered by lithium battery packs. A key technology advancement enabled by this project was development of a new onboard inverter-charger unit (ICU), which combines the functions of a motor inverter and battery charger. Other key advances included application of a new automated manual transmission and advanced battery management technologies to Class 8 electric trucks.

The ElecTruck project was highly successful in its core long term



Figure 18: Truck #2 with loaded container provided by Port of LA

objectives of achieving major technology advances in two key areas: (1) vehicle control and integration and (2) advanced energy storage. More generally, the ElecTruck project successfully advanced the state of the art in application of electric propulsion technology to Class 8 trucks, and provided valuable lessons learned that enabled TransPower to proceed to even more advanced component and integrated subsystem designs that are being incorporated into a growing fleet of fully operational electric Class 8 trucks, tractors and school buses. These vehicles are exhibiting performance characteristics beyond those of any other electric vehicles of this class.

The ElecTruck project demonstrated the essential feasibility of eliminating emissions from the largest and most polluting road vehicles - Class 8 trucks. If 5,000 electric trucks of the ElecTruck design were deployed in California by 2020, this would achieve an estimated aggregate emissions reduction of 378,500 tons of carbon per year – a significant step toward achieving the CARB 2020 limit of 427 million tons. Electric trucks of this design also eliminate criteria pollutants at the point of operation and reduce noise. By eliminating use of fossil fuels, they are also less expensive to operate and reduce our dependence on imported oil.

### Sources, Composition, Variability and Toxicological Characteristics of Ultrafine Particles in Southern California

Many of the health effects associated with exposure to particulate matter (PM) derive from the ability of PM to generate oxidative stress. There is evidence that ultrafine particles (UFP) (with diameters of  $< 0.1 - 0.2 \mu\text{m}$ ), in particular, may be more toxic than coarse or fine PM. Despite their very low contribution to PM mass, UFP dominate particle number concentrations as well as have a large surface area relative to fine or coarse particles and a high pulmonary deposition efficiency. These particles can thus carry considerable amounts of toxic air pollutants, such as organic carbon and transition metals.

This project involved collecting samples of quasi-ultrafine particles ( $\text{PM}_{0.25}$ ,  $\text{dp} < 0.25 \mu\text{m}$ ) over a year's time at several locations in the South Coast Air Basin. Sites included source, near-freeway, semi-rural receptor and desert locations. Twenty-four hour time-integrated samples were concurrently collected once a week for a year-long period at 10 distinctly different areas across the Los Angeles Basin, followed by comprehensive chemical and toxicological analyses, to provide insight on the seasonal and spatial variability in the chemical composition, sources and oxidative potential. The sampling site locations are shown in the following figure.

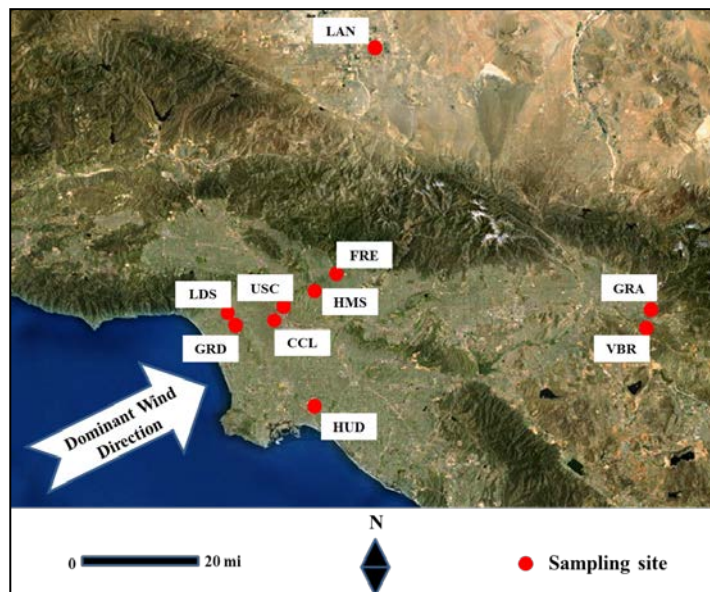
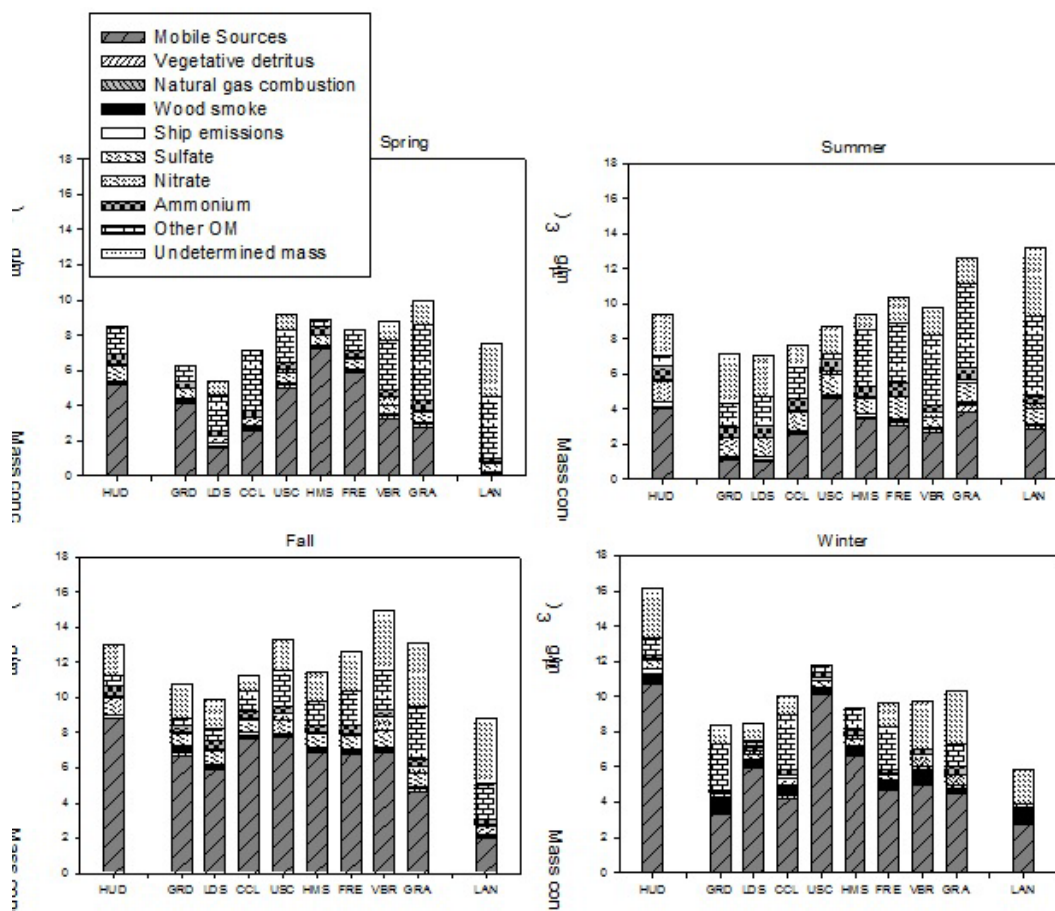


Figure 19: Location of the sampling sites



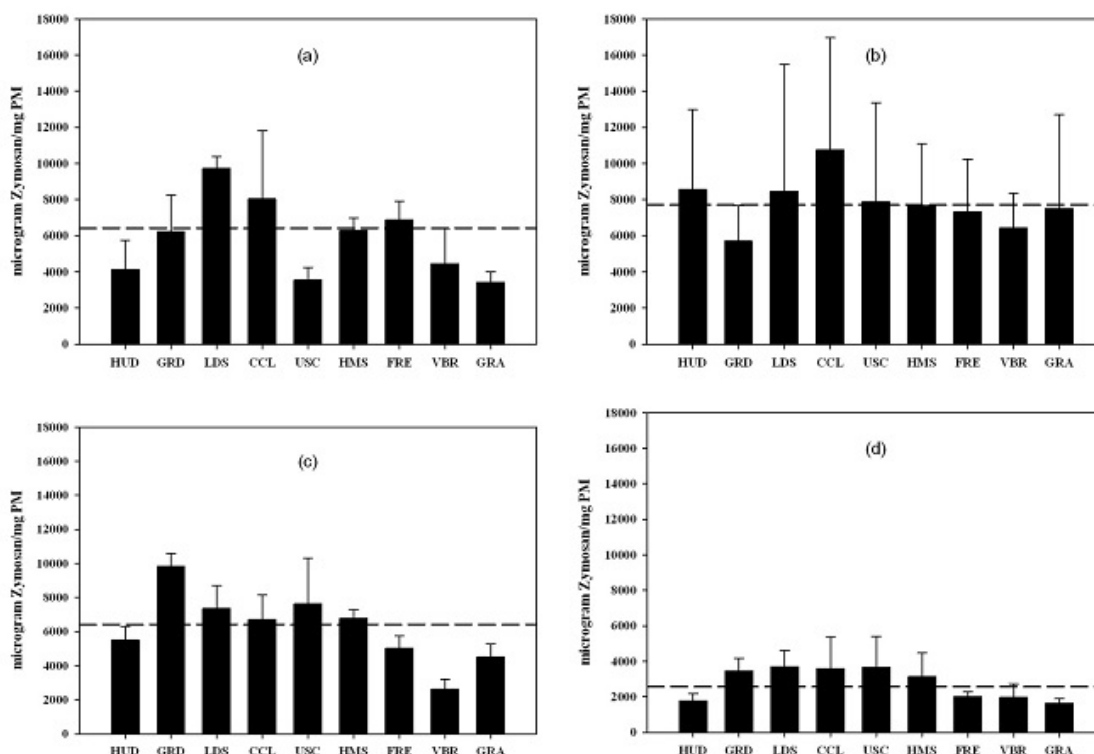
Average PM<sub>0.25</sub> mass concentration ranged from 5.9 to 16.1  $\mu\text{g}/\text{m}^3$  across the basin and seasons. Wintertime levels were highest at the source HUD site, while lowest at the desert-like LAN site. On the other hand, summertime concentrations peaked at the inland receptor locations. Chemical mass closure showed that that quasi-UFP in the basin consisted of 49–64% organic matter, 3–6.4% elemental carbon (EC), 9–15% secondary ions (SI), 0.7–1.3% trace ions, and 5.7–17% crustal material and trace elements, on a yearly average basis. Seasonal variation in source apportionment of quasi-ultrafine particles by site is show in the figure below.



**Figure 20: Seasonal variation in source apportionment of quasi-ultrafine particles ( $dp < 0.25 \mu\text{m}$ ) by site**

The redox activity (which is thought to be related to potential toxicity) of PM<sub>0.25</sub> samples was also assessed by means of a biological reactive oxygen species (ROS) assay (generation of ROS in rat alveolar macrophage cells). Seasonally, fall and summer displayed higher volume-based ROS-activity (i.e. ROS-activity per unit volume of air) compared to spring and winter. ROS levels were generally higher at near source and urban background sites compared to rural receptor locations, except for summer when comparable ROS-activity was observed at the rural receptor sites. Mass-based ROS activity, which reflects the intrinsic toxicity of particles, showed very similar trends to volume-based ROS activity, indicating that PM composition, more than PM mass concentration, was driving ROS activity. Variation in mass-based ROS Activity ( $\mu\text{g}$  Zymosan/ $\text{mg}$  PM) at different sampling sites are show below.





**Figure 21: Variation in mass-based ROS Activity ( $\mu\text{g}$  Zymosan/mg PM) at different sampling sites during: (a) spring, (b) summer, (c) fall and (d) winter. Error bars correspond to one standard deviation. Dashed lines indicate the average of 9 sampling sites**

These findings help establish the association between sources, composition and toxicity of UFP and provide a strong scientific basis for developing more targeted and cost-effective regulatory strategies at both the federal and state level. Moreover, the extensive database on UFP, generated from this project, constitutes an invaluable resource to PM exposure and health studies in the South Coast.

#### Publications:

A. Saffari, N. Daher, M. M. Shafer, J.J. Schauer, C. Sioutas. Seasonal and spatial variation in dithiothreitol (DTT) activity of quasi-ultrafine particles in the Los Angeles Basin and its association with chemical species. *Journal of Environmental Science and Health, Part A: Toxic/Hazardous Substances and Environmental Engineering*, 49 (4), 441-451, 2014

A. Saffari, N. Daher, M. M. Shafer, J.J. Schauer, C. Sioutas. Global perspective on the oxidative potential of airborne particulate matter: a synthesis of research findings. *Environmental science and technology*, 2014, 48, 7576-7583.

A. Saffari., N. Daher, M. M. Shafer, J.J. Schauer, C. Sioutas. Seasonal and spatial variation of trace elements and metals in quasi-ultrafine (PM<sub>0.25</sub>) particles in the Los Angeles metropolitan area and characterization of their sources. *Environmental Pollution*, 181, 14-23, 2013.

A. Saffari, N. Daher, M. M. Shafer, J.J. Schauer, C. Sioutas. Seasonal and spatial variation in reactive oxygen species activity of quasi-ultrafine particles (PM<sub>0.25</sub>) in the Los Angeles metropolitan area and its association with chemical composition. *Atmospheric Environment*, 79, 566-575, 2013.

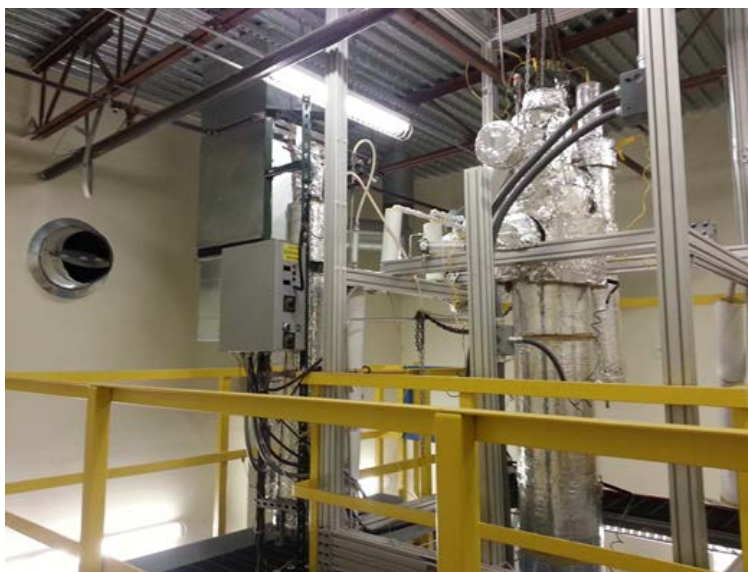
D. Wang, P. Pakbin, M. M. Shafer, D. Antkiewicz, J. J. Schauer and C. Sioutas. Macrophage Reactive Oxygen Species Activity of Water-soluble and Water-insoluble Fractions of Ambient Coarse, PM<sub>2.5</sub> and Ultrafine Particulate Matter (PM) in Los Angeles. *Atmospheric Environment*, 77, 301-310, 2013.

S. Hasheminassab, N. Daher, J.J. Schauer, C. Sioutas. Source apportionment and organic compound characterization of ambient ultrafine particulate matter (PM) in the Los Angeles Basin. *Atmospheric Environment*, 79, 529-539, 2013.

N. Daher, S. Hasheminassab, M.M. Shafer, J.J. Schauer, C. Sioutas. Seasonal and spatial variability in chemical composition and mass closure of ambient ultrafine particles in the megacity of Los Angeles. *Environmental Science: Processes and Impacts*, 15, 283-295, 2013.

### **Conversion of Biowaste to Natural Gas using Steam Hydrogasification**

Utilization of renewable energy sources is an integral part of California's strategy to reduce greenhouse gas emissions and to diversify domestic energy sources. Renewable Natural Gas (RNG) can be produced from carbonaceous and renewable feedstocks through a number of technologies including anaerobic digestion, gasification and pyrolysis. However, these technologies are often inefficient and the product gas is typically of low quality and inferior to fossil source-based natural gas. The Steam Hydrogasification Reaction (SHR), developed by the University of California Riverside/CE-CERT, is a thermo-chemical process that can produce high quality RNG from organic waste in a cost-effective and efficient manner. The SHR is also capable of handling wet feedstock providing an attractive alternative to landfilling solid wastes with high moisture contents like wastewater sludge that can pose more environmental issues in disposal. Another key benefit of this process is it uses steam to significantly increase the methane formation rate with a high carbon conversion efficiency compared to other gasification technologies. In addition, the SHR does not require an expensive oxygen plant that can be a significant barrier for smaller-scale production facilities.



**Figure 22: PDU SHR-WGS system**

The objective of this project was to demonstrate the SHR system in a Process Development Unit (PDU) scale reactor to produce RNG from organic waste in order to validate and optimize the process for a pilot plant design. A bubbling fluidized bed SHR with a 5 lb/hr feed rate was used in this project with a water gas shift (WGS) reactor integrated to maximize the methane production. As illustrated in Figure 42, biosolids comingled with food and green waste were pretreated in a hydrothermal reactor to pumpable slurry and fed into the SHR. When the slurry reached the

reaction zone, it reacted with hydrogen and water producing methane, CO and CO<sub>2</sub>. With solid particles and moisture removed through a gas clean-up process, the product gas then passed through the WGS to convert CO into hydrogen and CO<sub>2</sub>. In this project, a gas recirculation loop was added to recycle internally generated hydrogen back to the reactor for a self-sustained operation without external hydrogen supply.

The demonstration yielded a final gas composition of 73% CH<sub>4</sub> and 27% CO after CO<sub>2</sub> separation. In addition, an ASPEN modeling study showed that the methane concentration can be further increased to 90% by utilizing CO in the methanation process. Carbon conversion efficiency was 75% meaning 75% of carbon in the feedstock was utilized to produce the

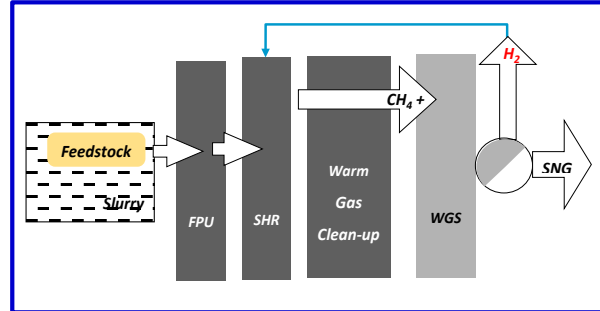


Figure 23: SHR-WGS Process Diagram

product gas. The remaining 25% was converted into char that can be utilized as fuel for heat source in a larger scale demonstration. Through this project, the process condition was optimized as follows: 1.0 H<sub>2</sub>/C mole ratio, 1.5 H<sub>2</sub>O/feedstock mass ratio, 750oC reactor temperature, 400 Psia reactor pressure, and 320-380oC WGS operation temperature. In addition, an economic analysis for a commercial-scale plant showed that the RNG production cost will range from \$5 to \$15/MMBtu depending on site capacity and applications.

Biofuels derived from waste-based feedstocks typically have lower carbon intensities compared to other biofuels and alternative fuels. The SHR process has demonstrated potentials to produce high quality RNG from biomass waste more efficiently than competing renewable energy technologies including anaerobic digesters. Based on a preliminary feedstock availability assessment, a wide-scale implementation of this technology can help to support about 5% of the natural gas consumption in California.

**Table 5: Projects Completed between January 1 & December 31, 2014**

<b>Contract</b>	<b>Contractor</b>	<b>Project Title</b>	<b>Date</b>
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**Infrastructure and Deployment**

06028	Consolidated Disposal Service, LLC	Purchase & Install CNG Fueling System at Long Beach Waste Transfer Station	Jul-14
07051	City of Pasadena	Purchase & Install New Public Access CNG Fueling Station	Mar-14
07244	SunLine Transit Agency	Upgrade Existing Public Access CNG Fueling Stations in Thousand Palms & Indio	Apr-14
07245	USA Waste of California, Inc.	Purchase & Install New LNG Production Facility Using Landfill Gas from Altamont Landfill in Livermore	Dec-14
08030	TNT Blanchard	Repower Four Off-Road Construction Vehicles	Jun-14
08101	Pupil Transportation Cooperative	Upgrade Existing Full Public Access CNG Fueling Station in Whittier	Jun-14
09308	Trillium CNG (formerly Pinnacle)	Maintain & Manage SCAQMD's Diamond Bar Headquarters' Fast-Fill CNG Refueling Station	Nov-14
10034	California Cartage Company	Install Two LNG Fueling Stations at the Ports	Nov-14
10054†	Applied LNG Technologies	Upgrade & Perform Emergency Repairs of L/CNG Refueling Facility	Dec-14
10055	Waste Management	Install New Public Access CNG Refueling Station in Santa Ana	Dec-14
11561	SuperShuttle International, Inc.	Purchase & Deploy 34 CNG Shuttle Vans	Oct-14
12259	A-1 Alternative Fuel Systems	Demonstrate Natural Gas-Powered Police Pursuit Vehicle	Oct-14

**Emission Control Technologies**

10696	Johnson Matthey, Inc.	Optimize & Demonstrate Selective Catalytic Regenerating Technology (SCRT) for NO <sub>x</sub> & PM Emissions Control	Dec-14
10697	Johnson Matthey, Inc.	Optimize & Demonstrate Selective Catalytic Continuously Regenerating Technology (SCCRT) for NO <sub>x</sub> & PM Emissions Control	Dec-14
12113	Southern Counties Terminals dba Griley Air Freight	Retrofit Nine Heavy-Duty Diesel Trucks with DPFs	Mar-14
12114	South Bound Express, Inc.	Retrofit Three Heavy-Duty Diesel Trucks with DPFs	Mar-14
12118	National Ready Mixed Concrete, Co.	Retrofit 13 Heavy-Duty Diesel Trucks with DPFs	Mar-14
12120	Standard Concrete Products, Inc.	Retrofit 15 Heavy-Duty Diesel Trucks with DPFs	Mar-14
12121	Challenge Dairy Products, Inc.	Retrofit Three Heavy-Duty Diesel Trucks with DPFs	Mar-14

**Table 5: Projects Completed between January 1 & December 31, 2014**

<b>Contract</b>	<b>Contractor</b>	<b>Project Title</b>	<b>Date</b>
<b><i>Emission Control Technologies (cont'd)</i></b>			
12122	Bear Trucking, Inc.	Retrofit One Heavy-Duty Diesel Truck with DPFs	Mar-14
12123	RRM Properties Ltd.	Retrofit 127 Heavy-Duty Diesel Trucks with DPFs	Mar-14
12124	Gaio Trucking, Inc.	Retrofit Eight Heavy-Duty Diesel Trucks with DPFs	Mar-14
12125	Spragues Ready Mix	Retrofit Four Heavy-Duty Diesel Trucks with DPFs	Mar-14
12175	RRM Properties Ltd.	Retrofit Seven Heavy-Duty Diesel Trucks with DPFs	Mar-14
12186	Pipeline Carriers Inc.	Retrofit Ten Heavy-Duty Diesel Trucks with DPFs	Mar-14
13407	Chaffey Joint Union High School District	Demonstrate DPF Technology on Two School Buses	Mar-14
<b><i>Electric/Hybrid Technologies &amp; Infrastructure</i></b>			
11614	Transportation Power, Inc.	Demonstrate Battery Electric Heavy-Duty Trucks	Sep-14
11725†	Puente Hills Nissan	Lease Three Nissan Leaf Electric Vehicles for 39 Months	Aug-14
12020	Chargepoint	Upgrade & Install Electric Charging Infrastructure	Apr-14
12825†	BMW of Monrovia	Lease Two BMW ActiveE Electric Vehicles for Two Years	Jun-14
12889†	BMW of Monrovia	Lease Two BMW ActiveE Electric Vehicles for Two Years	Jun-14
13149	UCLA Luskin Center for Innovation	Develop Southern California PEV Readiness Plan	Mar-14
<b><i>Mobile Fuel Cell Technologies</i></b>			
15388	Bevilacqua-Knight, Inc.	Participate in California Fuel Cell Partnership for CY 2014 & Provide Support for Regional Coordinator	Dec-14
<b><i>Hydrogen Technologies &amp; Infrastructure</i></b>			
04185	Quantum Fuel Systems Technologies Worldwide Inc.	Develop & Demonstrate Hydrogen ICE Vehicles for Five Cities Program	Apr-14
13146†	California State University Los Angeles	Lease One Toyota Prius Hydrogen-Fueled Vehicle	Mar-14
<b><i>Health Impacts Studies</i></b>			
11527	University of Southern California	Study Sources, Composition, Variability & Toxicological Characteristics of Ultrafine Particles in Southern California	Dec-14

**Table 5: Projects Completed between January 1 & December 31, 2014**

<b>Contract</b>	<b>Contractor</b>	<b>Project Title</b>	<b>Date</b>
<b>Health Impacts Studies (cont'd)</b>			
12197	University of California Riverside/CE-CERT	Health Effects of PM Emissions from Heavy-Duty Vehicles—A Comparison Between Different Biodiesel Fuels	Mar-14
<b>Stationary Clean Fuel Technologies</b>			
09304	Solar Integrated Technologies, Inc.	Install & Evaluate Two 40kW (AC) PV Systems at SCAQMD Headquarters	Dec-14
11208†	Long Beach Unified School District	Long Beach USD Air Filtration MOA	Dec-14
13078	University of California Riverside/CE-CERT	Conversion of Biowaste to Natural Gas using Steam Hydrogasification	Dec-14
<b>Outreach and Technology Transfer</b>			
13078	University of California Riverside/CE-CERT	Conversion of Biowaste to Natural Gas using Steam Hydrogasification	Dec-14
07060†	Don Breazeale and Associates Inc.	Technical Assistance Related to Air Quality Impacts of Regional Goods Movement	May-14
07129†	Breakthrough Technologies Institute, Inc.	Technical Assistance with Fuel Cell Technology	Mar-14
11182†	Tech Compass	Technical Assistance with Alternative Fuels, Fuel Cells, Emissions Analysis and Aftertreatment Technologies	Dec-14
12309†	TIAX LLC	Technical Assistance with Low- and Zero-Emission Vehicles, Fuel Cells and Fueling Infrastructure	Apr-14
12604†	Joseph C. Calhoun, P.E., Inc.	Technical Assistance with Low- and Zero-Emission Vehicles, Technology & Emissions Analysis	Dec-14
13081†	Burnett & Burnette	Technical Assistance in Evaluation and Assessing New Installations of Alternative Fueling Stations	Apr-14

†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 2015 PLAN UPDATE

The Clean Fuels Program (Program) was first created in 1988, along with the SCAQMD's Technology Advancement Office (TAO). Funding for the Program is received through a \$1 motor vehicle registration fee. The Clean Fuels Program 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 as well as the latest progress in the state-of-technologies, new research areas and data.

Every year the SCAQMD re-evaluates the Clean Fuels Program based on the region's ongoing need for emissions reductions and develops a Plan Update for the upcoming calendar year (CY) targeting near-term projects to help achieve those reductions. This portion of this comprehensive document is the Plan Update for 2015.

### Overall Strategy

The overall strategy of the SCAQMD's Clean Fuels Program is based primarily 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 identified the need for 200 tons/day oxides of nitrogen (NO<sub>x</sub>) reductions to be adopted by 2020 for full implementation by 2023 and in large part focuses control measures on transportation technologies and cleaner fuels. 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."<sup>2</sup> 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). Ozone (smog) is created by a chemical reaction between NO<sub>x</sub> and VOCs emissions at ground level. This is especially noteworthy because the largest contributor to ozone is NO<sub>x</sub> emissions, and mobile sources (on- and off-road as well as aircraft and ships) contribute to more than three-fourths of the NO<sub>x</sub> emissions in this region.

The daunting challenge to reduce ozone and NO<sub>x</sub> require the Clean Fuels Program to encourage and accelerate advancement of transformative fuel and transportation technologies, leading the way for commercialization of progressively lower-emitting fuels and vehicles. If this region hopes to meet the 8-hour ozone standard (80 ppb) by 2023 (or the revised standard of 75 ppb by 2032), it is projected that a 65% reduction in NO<sub>x</sub> is required. The NO<sub>x</sub> and VOC emission

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<sup>2</sup> [http://www.arb.ca.gov/planning/vision/docs/vision\\_for\\_clean\\_air\\_public\\_review\\_draft.pdf](http://www.arb.ca.gov/planning/vision/docs/vision_for_clean_air_public_review_draft.pdf)

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. To underscore this concern, the 2013 Vehicle Technologies Market Report<sup>3</sup>, released in early 2014 by the Oak Ridge National Laboratory for the Department of Energy, and corroborated by EMFAC 2011 projections, notes that Class 8 trucks comprise 41% of the medium- and heavy-duty truck fleet but consume 78% of the fuel use in this sector. This is especially significant since the report also notes that Class 8 truck sales have continued to increase significantly since 2009. In addition to NO<sub>x</sub> and VOCs, fine particulate matter (PM<sub>2.5</sub>) produced from mobile sources must also be reduced. From preliminary 2014 data, it appears the region may not have reached attainment of the 2014 standard for PM<sub>2.5</sub>. A supplement to the 24-hour PM<sub>2.5</sub> State Implementation Plan (SIP) will focus on achieving the PM<sub>2.5</sub> standard in 2015, and a 2016 AQMP will focus on achieving the ozone standards. Given the relationship between NO<sub>x</sub> and ozone and possible control strategies that might be identified for PM<sub>2.5</sub> attainment by 2015, the 2015 Plan Update must emphasize emission reductions in these areas.

In recent years, it has become increasingly clear that the effect of containers being moved 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, in the last couple of years, the SCAQMD has initiated a concerted effort to 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 preliminary findings from the Multiple Air Toxics Exposure Study (MATES) IV<sup>4</sup>, which included local scale studies near large sources such as ports and freeways, reinforce the importance of these impacts and the need for transformative transportation technologies, especially near the ports and goods movement corridor.

For over 20 years, a key strategy of the Clean Fuels Program has been its implementation as a public-private partnership in conjunction with private industry, technology developers, academic institutions, research institutions and government agencies. This public-private partnership has allowed the Program to leverage its funding with at least \$3 spend on R&D projects to every \$1 of SCAQMD funds.

As the state and federal governments have turned a great deal of their attention to climate change, the SCAQMD has remained committed to developing, demonstrating and commercializing zero and near-zero emission technologies. Fortunately many, if not the majority, of technology sectors that address our need for NO<sub>x</sub> reductions also garner greenhouse gas (GHG) reductions. Due to these "co-benefits," we have been successful in partnering with the state and federal grants.

## Funding Scope

This 2015 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 (1) new and changing federal requirements such as the newer 2032 ozone standard in addition to the current 2023 standard, (2)

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<sup>3</sup> <http://cta.ornl.gov/vtmarketreport/index.shtml>

<sup>4</sup> <http://www.aqmd.gov/home/library/air-quality-data-studies/health-studies/mates-iv>



implementation of new technology measures, and (3) the continued development of economically sound compliance approaches. The scope of projects in the 2015 Plan Update also needs to remain sufficiently flexible to address new challenges and proposed methodologies that are identified in the 2012 AQMP, to consider dynamically evolving technologies, and to incorporate new research and data, such as the draft findings from the MATES IV study, which was undertaken to update the emissions inventory of toxic air contaminants and conduct a regional modeling effort to characterize risk to health across the Basin. The study included measuring ultrafine particle and black carbon concentrations, as well as the white papers under development for the 2016 AQMP, which will focus on addressing ozone standards. Finally, given the 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), coupled with 2014-15 state budget appropriations relative to reducing greenhouse gases (GHGs), the co-benefits of technologies should also be considered.

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. Some of the technologies that are developed and demonstrated in the Clean Fuels Program may serve as control measures for the "black box."

Within the core technology areas defined later in this section, 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.

- Most technology *development* projects are expected to begin during 2015 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 2018. 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 2020 or later.
- More mature technologies, those ready to begin field *demonstration* in 2015, are expected to result in a commercial product in the 2016-2017 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, in addition to government's role to reduce risk by funding technology development and testing, one of government's roles is to support and offset any incremental cost through incentives 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.

## Core Technologies

As previously noted, the SCAQMD Clean Fuels Program maintains flexibility to address dynamically evolving technologies incorporating the latest state-of-the-technology 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 2023 8-hour ozone standard, the areas of zero and near-zero emission technologies need to be emphasized. The working definition of “near-zero” is an order of magnitude lower than the existing 0.2 g/bhp-hr NO<sub>x</sub>. This level is 0.02 g/bhp-hr NO<sub>x</sub> and close to a combined cycle powerplant emissions rate. This effort can be seen in the following sections and in the proposed funding distribution in Figure 24 (page 74). The major core technology areas are identified below with specific project categories discussed in more detail in the following sections. The core 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 continually made to form private partnerships to leverage Clean Fuels funds. For example, there may be an upcoming opportunity to leverage state funding since SB 1204 (Lara and Pavley), which was chaptered last month, designates money from the state’s cap-and-trade program for development, demonstration and early commercialization of zero and near-zero emission truck, bus and off-road vehicles.

It should be noted, therefore, 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 core technology areas are listed by current SCAQMD priorities based on the goals for 2015.

### ***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-2014 the CaFCP published Hydrogen Progress, Priorities and Opportunities, a report updating its 2012 roadmap describing the first network of commercial hydrogen stations in California, which calls for 68 hydrogen fueling stations in cluster communities at specific destinations by 2016. CEC funding awards over the last two years, along with some smaller cost-share support from SCAQMD, have made significant inroads to creating a growth path to 100 hydrogen stations, the state’s current goal for launching a commercially self-sustaining network to support a growing number of fuel cell vehicles to implement the state’s

ZEV Action Plan. Furthermore, in September 2013 the Governor signed Assembly Bill 8 providing significant funding for hydrogen stations, which will greatly assist in making the inroads necessary toward expanding the hydrogen infrastructure network in California.

Calendar Years 2015-2017 are a critical timeframe for the introduction of FCVs. In fact, several automakers are scheduled to release products in 2015-2016, Hyundai being the first to already offer a FCV for lease in 2014. Since stations need one to two years lead time for permitting and construction, plans for stations need to be initiated now. While coordination efforts with the Division of Measurement Standards to establish standardized measurements for hydrogen refueling started in 2014, additional efforts to offer hydrogen for sale to general consumers is still needed. 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.

Commencing late 2012, the California Energy Commission (CEC), which based its AB 118 hydrogen funding strategy on CaFCP's roadmap as well as the University of California, Irvine's Advanced Power and Energy Program, has issued multiple Program Opportunity Notices for hydrogen fuel infrastructure and to date has awarded funding for 36 new hydrogen fueling stations. The CEC in mid-2013 awarded the SCAQMD \$6.7 million to implement the upgrade and refurbishment of existing hydrogen fueling stations to ensure legacy stations continue operation as FCVs become available in the market. The SCAQMD received a subsequent award of \$300,000 in 2014 from CEC to implement a plan for hydrogen readiness in early market communities. The SCAQMD, working closely with state agencies, to implement these programs and continue efforts to upgrade and refurbish existing hydrogen infrastructure.

The 2015 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 engine systems for medium- and heavy-duty vehicle 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
- development and implementation of 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.

### ***Electric/Hybrid Technologies & Infrastructure***

If the region hopes to meet the federal standards for PM<sub>2.5</sub> 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. Additionally, the impact of fast charging on battery life and infrastructure costs is not well understood.

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 is commercially available product, is not yet mainstream technology, may have applications for medium- and heavy-duty vehicles. In fact, the goal of SB 1275 (de León), chaptered last month, is to bring one million emission electric vehicles to California over the next ten years as well as to ensure that disproportionately impacted communities benefit from this transition toward cleaner transportation.

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 and high horsepower applications;
- continued development and demonstration of alternative fuel medium-duty and heavy-duty engines and vehicles;
- development and demonstration of alternative fuel engines for off-road applications;
- evaluation of alternative engine systems such as compressed air propulsion and hydraulic plug-in hybrid vehicles;
- development and demonstration of engine systems that employ advance fuel or alternative fuels, engine design features, improved exhaust or recirculation systems, and aftertreatment devices;
- development and demonstration of engine systems that employ advance fuel or alternative fuels, engine design features, improved exhaust or recirculation systems, and aftertreatment devices.

## ***Infrastructure and Deployment (Natural Gas)***

The importance of natural gas and related 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, evaluation of the 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.

### ***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<sub>x</sub> 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, a couple of years ago the SCAQMD 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 have continued in 2014 to further investigate the toxicological potential of emissions, such as ultrafine particles and vapor phase substances, and to determine whether or not 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 that the Clean Fuels Program 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 emissions of 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<sub>x</sub> than the existing standard. A study in 2015 on DME is being proposed.

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;
- lifecycle energy and emissions analyses to evaluate conventional and alternative fuels; and
- analysis of fleet composition and their associated impacts.

## ***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<sub>x</sub>, 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.

Additionally, alternative energy storage could be achieved through vehicle to grid or vehicle to building technologies. The University of California Riverside's Sustainable Integrated Grid Initiative, funded in part by the SCAQMD and launched in 2014, for example could assist in the evaluation of these technologies. Projects conducted under this category may include:

- development and demonstration of reliable, low emission stationary technologies (e.g., low NO<sub>x</sub> burners, fuel cells or microturbines);
- exploration of renewables as a source for cleaner stationary technologies;
- evaluation, development and demonstration of advanced control technologies for stationary sources; and
- vehicle-to-grid or vehicle-to-building demonstration projects to develop sustainable, low emission energy storage alternatives

## ***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);

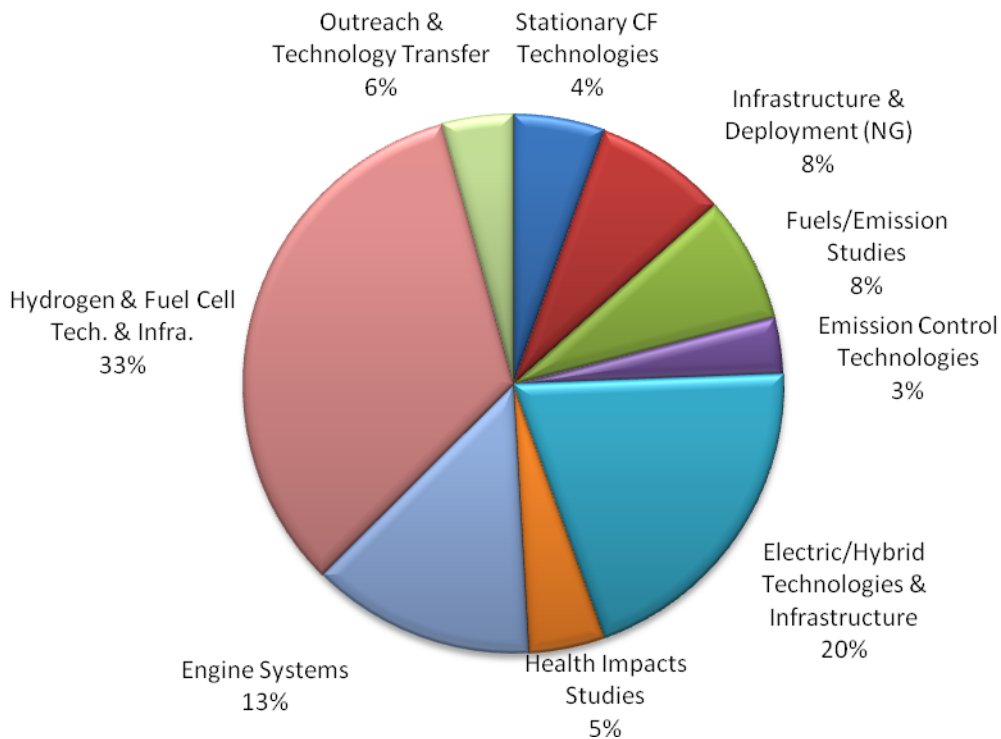
- development and demonstration of low-VOC and PM lubricants for diesel and natural gas engines; and

### ***Outreach and Technology Transfer***

Since the value of the Clean Fuels Program depends on the deployment and adoption of the demonstrated technologies, outreach and technology transfer efforts are essential to its success. This core area encompasses assessment of advanced technologies, including retaining outside technical assistance as needed, efforts to expedite the implementation of low emission and clean fuels technologies, coordination of these activities with other organizations and information dissemination to educate the end user. Technology transfer efforts include support for various clean fuel vehicle incentive programs as well.

## **Target Allocations to Core Technology Areas**

Figure 24 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 2015 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 2015 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 24: Projected Cost Distribution for Potential SCAQMD Projects in 2015 (\$16.4M)**



## PROGRAM PLAN UPDATE FOR 2015

This section presents the Clean Fuels Program Plan Update for 2015. The proposed projects are organized by program areas and described in further detail, consistent with the SCAQMD budget, priorities and the best available information on the state-of-the-technology. 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 6 summarizes potential projects for 2015 as well as the distribution of SCAQMD costs in some areas as compared to 2015. 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 continue 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 2015-2016. Some additional funding has also been shifted to Fuels and Emissions Studies in order to further evaluate biofuels including DME and to partner with the National Renewable Energy Laboratory (NREL) on a fleet and technology matching analysis. Like the prior year, the funding allocations again align well with the SCAQMD's FY 2014-15 Goals and Priority Objectives. Overall, the Program is designed to 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 6 (page 77).

**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 6: Summary of Potential Projects for 2015**

Proposed Project	Expected SCAQMD Cost \$	Expected Total Cost \$
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**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 Medium- and Heavy-Duty Fuel Cell Vehicles	3,000,000	10,000,000
Demonstrate Light-Duty Fuel Cell Vehicles	100,000	100,000
Subtotal	\$5,450,000	\$20,100,000

**Electric/Hybrid Technologies & Infrastructure**

Demonstrate Light-Duty Plug-In Hybrid & Battery Electric Vehicles and Infrastructure	1,100,000	2,000,000
Develop and Demonstrate Medium- and Heavy-Duty Hybrid Vehicles and Infrastructure	600,000	1,800,000
Demonstrate Alternative Energy Storage	300,000	2,000,000
Develop and Demonstrate Electric Container Transport Technologies	1,300,000	2,600,000
Subtotal	\$3,300,000	\$8,400,000

**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

**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

**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	500,000	1,300,000

**Table 6: Summary of Potential Projects for 2015 (cont'd)**

Proposed Project	Expected SCAQMD Cost \$	Expected Total Cost \$
<b>Fuels/Emission Studies (cont'd)</b>		
Identify and Demonstrate In-Use Fleet Emissions Reduction Technologies & Opportunities	250,000	2,000,000
Subtotal	\$1,250,000	\$4,300,000
<b>Health Impacts Studies</b>		
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
<b>Stationary Clean Fuel Technologies</b>		
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
<b>Emission Control Technologies</b>		
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
<b>Outreach and Technology Transfer</b>		
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
<b>TOTALS FOR POTENTIAL PROJECTS</b>	<b>\$16,400,000</b>	<b>\$79,050,000</b>

## Technical Summaries of Potential Projects

### ***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 2013, cash-flow analysis resulting in a Hydrogen Network Investment Plan and fuel cell vehicle development partnership announcements by major automakers enabled the passage of AB 8 which provides \$20 million per year for hydrogen infrastructure cofunding through the CEC. This resulted in limited fuel cell vehicle production announcements by Hyundai, Toyota and Honda for 2014-2015.

In mid-2014 the CaFCP published the *Hydrogen Progress, Priorities and Opportunities* (HyPPO) report, an update of their roadmap describing the first network of commercial hydrogen stations in California.

Additional work in this project category would develop a plan to secure long-term funding to complete the hydrogen fueling network build-out, provide details how funding can be invested, assess alternative revenue streams such as renewable incentives, propose alternative financing structures to leverage/extend CEC funding, and support station operation during the transition to commercial viability.

**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 NOx, 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<sub>x</sub>, VOC, CO, PM and toxic compound emissions from vehicles.

**Proposed Project:** Develop and Demonstrate Medium- and Heavy-Duty Fuel Cell Vehicles

**Expected SCAQMD Cost:** \$3,000,000

**Expected Total Cost:** \$10,000,000

**Description of Technology and Application:**

This proposed project would support evaluation including 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.

The California ZEV Action Plan specifies actions to help deploy an increasing number of zero emission vehicles, including medium- and heavy-duty ZEVs. 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. In some cases, medium- and heavy-duty fuel cell vehicles could leverage the growing network of hydrogen stations, providing an early base load of fuel consumption until the number of passenger vehicles grows. 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.

In 2012 SCAQMD launched demonstrations of Zero Emission Container Transport (ZECT) technologies. This project included development and demonstration of a fuel cell hybrid electric truck platform. In 2015 staff proposes to launch ZECT II to develop and demonstrate additional fuel cell truck platforms and vehicles.

This category may include projects in the following applications:

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|---|--|
| <p>On-Road:</p> <ul style="list-style-type: none"><li>• Transit Buses</li><li>• Shuttle Buses</li><li>• Medium- &amp; Heavy-Duty Trucks</li></ul> | <p>Off-Road:</p> <ul style="list-style-type: none"><li>• Vehicle Auxiliary Power Units</li><li>• Construction Equipment</li><li>• Lawn and Garden Equipment</li><li>• Cargo Handling Equipment</li></ul> |
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**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.



**Proposed Project:**     Demonstrate Light-Duty Fuel Cell Vehicles

**Expected SCAQMD Cost:**     \$100,000

**Expected Total Cost:**     \$100,000

**Description of Technology and Application:**

This proposed project would support the demonstration of limited production and early commercial fuel cell passenger vehicles using gaseous hydrogen with proton exchange membrane (PEM) fuel cell technology. Recent designs of light-duty fuel cell vehicles include hybrid batteries to recapture regenerative braking and improve overall system efficiency.

With the implementation of the California ZEV Action Plan, supplemented by the existing and planned hydrogen refueling stations in the Southern California area, light-duty fuel cell limited-production vehicles are planned for retail deployment in early commercial markets near hydrogen stations by several automakers. 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. SCAQMD has included fuel cell vehicles as part of its demonstration fleet since our first hydrogen station began operation in 2005; strengthening support, education, and outreach regarding fuel cell vehicle technology on an on-going basis. In addition, demonstration vehicles could include hybrid-electric vehicles powered by fuel cells and equipped with larger batteries capable of being charged from the grid and even supplying power to the grid.

**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 deployment of zero- emission vehicles in SCAQMD’s demonstration fleet. 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.

## ***Electric/Hybrid Technologies & Infrastructure***

**Proposed Project:** Demonstrate Light-Duty Plug-In Hybrid & Battery Electric Vehicles and Infrastructure

**Expected SCAQMD Cost:** \$1,100,000

**Expected Total Cost:** \$2,000,000

### **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 enables passenger vehicles to charge from 110/120V AC (Level 1), 220/240V AC (Level 2), and faster 440/480V DC charging using a common conductive connector in 30 minutes or less in the U.S. and Europe. The impact of fast charging on battery life and infrastructure costs is not well understood and will be evolving as three fast DC systems (SAE combo, CHAdeMO and Tesla) compete for international market share.

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.

The SCAQMD has long been a leader in promoting early demonstrations of next generation light-duty vehicle propulsion technologies (and fuels). However, given the current and planned market offerings in this category, priorities have shifted. Nevertheless, the SCAQMD will continue to evaluate market offerings and proposed technologies in light-duty vehicles to determine if any future support is required.

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; 7) support for local government outreach and charging

installation permit streamlining; and 8) evaluation of any new promising light-duty vehicle propulsion technologies or fuels.

**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 zero and near-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:** \$600,000

**Expected Total Cost:** \$1,800,000

**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, fuel cell propulsion systems and other wayside power alternatives. 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<sub>x</sub> 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<sub>x</sub> 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- and heavy-duty vehicles and high horsepower applications;
- 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<sub>x</sub>. 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.

## **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<sub>x</sub>, VOC, CO, PM and toxic compound emissions from mobile sources. Such increased penetration of NGVs will provide direct emissions reductions of NO<sub>x</sub>, 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<sub>x</sub>, PM and toxic compound emissions.

## **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:** \$500,000

**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. It's noteworthy to mention that last year the Low-Carbon Fuel Standard was upheld by the U.S. Court of Appeals for the Ninth Circuit last year and more recently opponents were denied further appeal by the Supreme Court. With an anticipated increase in biofuel use, it is the objective of this project 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<sub>x</sub> emissions, which exacerbates the ozone and PM<sub>2.5</sub> 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<sub>x</sub>, 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<sub>x</sub> 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<sub>x</sub> 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<sub>x</sub> 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<sub>x</sub> 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 project, 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, biofuels and others. This project 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 potential 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.

MATES IV was initiated in mid-2012 and includes an air monitoring program, an updated emissions inventory of toxic air contaminants and a regional modeling effort to characterize risk across the Basin. The draft report was released for public review in October 2014. In addition to air toxics, MATES IV also measured ultrafine particle concentrations and black carbon at the monitoring sites as well as 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<sub>x</sub> 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<sub>x</sub> 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 O<sub>2</sub> sensor known as a wide-band O<sub>2</sub> sensor, is another alternative that can be analyzed. Another technical approach might be to deploy technology utilizing the O<sub>2</sub> signature of a post-catalyst O<sub>2</sub> 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<sub>x</sub> 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<sub>x</sub> and/or CO emissions above levels required in their permits. Projects could potentially reduce a significant class of NO<sub>x</sub> 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<sub>x</sub> 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<sub>x</sub>, 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<sub>2.5</sub> 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 potentially including vehicle to grid or vehicle to building functionalities for alternative energy storage; 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.

## **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<sub>x</sub> 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<sub>x</sub>, 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<sub>x</sub> adsorbers, could also have NO<sub>x</sub> 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<sub>x</sub> in 2004 to 0.2 g/bhp-hr NO<sub>x</sub> 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<sub>x</sub>. 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.



## ***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<sub>x</sub> 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
*Fabiola P. Lao .....	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, 2015**

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD \$	Project Total \$
<b>Infrastructure and Deployment</b>						
05250	Downs Commercial Fueling, Inc.	Purchase & Install New L/CNG Fueling System at Commercial Fueling Station in Temecula	11/04/05	04/30/16	\$203,137	\$833,333
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
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
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	12/31/17	525,000	700,000
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	03/31/15	257,000	425,000
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	Clean Energy (novated from Mansfield Gas Equipment Systems)	Buydown Incentive Program for CNG Home Refueling Appliance "Phill"	09/07/12	06/30/15	60,000	356,000
12135	Placentia-Yorba Linda Unified School District	Upgrade CNG Fueling Station	11/18/11	11/30/17	60,000	60,000
12267	West Covina Unified School District	Upgrade CNG Fueling Facility	10/12/12	12/31/17	60,000	60,000
12851	Clean Energy	Install, Operate and Maintain Three LNG Fueling Stations (Fontana, Coachella and Perris)	10/05/12	12/31/18	1,400,000	4,277,323
12852	City of Covina	Construct Public Access CNG Fueling Stations	10/12/12	12/31/18	200,000	618,429
12853	Rainbow Disposal Co. Inc.	Upgrade CNG Fueling Station	03/08/13	12/31/18	200,000	400,000

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD \$	Project Total \$
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**Infrastructure and Deployment**

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
14219	City of West Covina	Upgrade CNG Station at City Yard	05/15/14	06/15/17	200,000	618,429
14311	Southern California Gas Company	Install and Maintain CNG Fueling Station in Murrieta for SoCalGas	07/11/14	12/31/17	217,000	1,385,000
15438	United Parcel Service, Inc.	Refurbish/Upgrade Ontario UPS LCNG Infrastructure	12/31/14	06/30/18	246,707	484,535

**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 AQMD	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	06/30/15	60,000	60,000
13402	University of California Davis-Office of Research	Next Sustainable Transportation Energy Pathways (STEPS) Program	05/02/14	07/01/16	120,000	2,760,000
14162	National Renewable Energy Laboratory	Utilization of Fleet DNA Approach and Capabilities to Provide Vehicle Vocational Analysis in SCAQMD	02/26/14	12/30/15	174,985	199,985

**Electric/Hybrid Technologies**

08063	Quantum Fuel Systems Technologies Worldwide, Inc.	Develop & Demonstrate 20 Plug-In Hybrid Electric Vehicles	01/22/08	12/31/15	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	11/30/15	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
11615	Parker Hannifin Corporation	Develop & Demonstrate Up to Four Heavy-Duty Hydraulic Hybrid Vehicles	01/18/13	12/13/16	250,000	2,000,000
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
12862	Volvo Technology of America, Inc.	Develop Class 8 Plug-In Hybrid Heavy-Duty Vehicle	12/07/12	07/31/15	1,200,000	2,400,000
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	03/30/16	360,000	1,210,000



Contract	Contractor	Project Title	Start Term	End Term	SCAQMD \$	Project Total \$
<b>Electric/Hybrid Technologies &amp; Infrastructure (cont'd)</b>						
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
13396	Transportation Power Inc.	Develop and Demonstrate Seven Class 8 Zero Emission Electric Trucks	04/19/13	12/31/16	375,000	2,285,368
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
13418	City of Claremont	SoCalEV Infrastructure MOA to Install & Upgrade EV Charging Infrastructure	08/29/13	12/30/15	0	0
13419	California State University, Los Angeles	SoCalEV Infrastructure MOA to Install & Upgrade EV Charging Infrastructure	08/05/13	12/30/15	0	0
13420	University of California Irvine	SoCalEV Infrastructure MOA to Install & Upgrade EV Charging Infrastructure	08/28/13	12/30/15	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
14053	Electric Power Research Institute	PHEV Fleet Participation Agreement	10/01/13	07/31/15	0	0
14062	Siemens Industry Inc.	Develop and Demonstrate Catenary Zero Emissions Goods Movement System and Develop and Demonstrate Diesel Catenary Hybrid Electric Trucks	07/14/14	07/13/18	5,500,000	14,780,000
14074	City of Santa Monica	SoCalEV Infrastructure MOA to Install & Upgrade EV Charging Infrastructure	12/04/13	06/30/15	0	0
14095	City of Covina	SoCalEV Infrastructure MOA to Install & Upgrade EV Charging Infrastructure	01/22/14	06/30/15	0	0
14153	University of California, Santa Babara	SoCalEV Infrastructure MOA to Install & Upgrade EV Charging Infrastructure	02/04/14	06/30/15	0	0
14156	Galpin Motors Inc. (Galpin Ford)	Lease of Two Fusion Energi and One C-Max Energi PHEVs for a Three-Year Period	01/28/14	01/27/17	49,298	49,298
14184	Clean Fuel Connection Inc.	DC Fast Charging Network Provider	04/04/14	06/30/20	250,000	1,318,000
14199	Clean Fuel Connection Inc.	SoCalEV Infrastructure MOA to Install & Upgrade EV Charging Infrastructure	04/14/14	12/30/15	0	0

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD \$	Project Total \$
<b>Electric/Hybrid Technologies &amp; Infrastructure (cont'd)</b>						
14201	California State University San Bernardino	SoCalEV Infrastructure MOA to Install & Upgrade EV Charging Infrastructure	04/04/14	06/30/15	0	0
14202	Adopt-A-Charger	SoCalEV Infrastructure MOA to Install & Upgrade EV Charging Infrastructure	04/14/14	12/30/15	0	0
14204	Associated of Los Angeles	SoCalEV Infrastructure MOA to Install & Upgrade EV Charging Infrastructure	10/10/14	06/30/15	0	0
14207	City of Palmdale	SoCalEV Infrastructure MOA to Install & Upgrade EV Charging Infrastructure	07/11/14	06/30/15	0	0
14208	City of Lake Elsinore	SoCalEV Infrastructure MOA to Install & Upgrade EV Charging Infrastructure	10/15/14	06/30/15	0	0
14209	California State Polytechnic University Pomona	SoCalEV Infrastructure MOA to Install & Upgrade EV Charging Infrastructure	06/06/14	06/30/15	0	0
14210	California State University Long Beach Office of Research Programs and Sponsored Programs	SoCalEV Infrastructure MOA to Install & Upgrade EV Charging Infrastructure	07/11/14	06/30/15	0	0
14222	Odyne Systems, LLC	Develop and Demonstrate Plug-In Hybrid Electric Retrofit System for Class 6 to 78 Trucks	04/24/14	04/23/16	389,000	2,226,571
14224	Complete Coach Works	Develop and Test Retrofit All Electric Transit Bus	04/24/14	07/30/15	395,000	867,182
14236	California State University Fullerton	SoCalEV Infrastructure MOA to Install & Upgrade EV Charging Infrastructure	05/02/14	06/30/15	0	0
14256	National Strategies LLC	Develop and Demonstrate Vehicle-2-Grid Technology	09/05/14	03/04/18	250,000	3,377,689
14323	Selman Chevrolet Company	Lease Two 2014 Chevrolet Volt Extended-Range Electric Vehicles for Three Years	03/28/14	03/27/17	30,932	30,932
15021	Transportation Power Inc.	Upgrade and Demonstrate Two Electric Yard Tractors	07/14/14	12/31/15	75,000	405,000

**Engine Systems**

13168	National Renewable Energy Laboratory	Develop, Integrate and Demonstrate Heavy-Duty Natural Gas Engines and Vehicles	05/22/13	12/31/15	1,300,000	1,300,000
14364	Cummins Inc.	Develop, Integrate and Demonstrate Ultra-Low Emission Natural Gas Engines for On-Road Heavy-Duty Vehicles	07/14/14	08/20/16	2,061,000	5,308,000

**Mobile Fuel Cell Technologies**

12155	University of California Irvine	Toyota Fuel Cell Hybrid Vehicle Lease	09/27/13	12/31/15	0	0
13155	Fletcher Jones Motor Cars (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

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD \$	Project Total \$
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**Mobile Fuel Cell Technologies (cont'd)**

14622	California State University Long Beach Foundation	CSULB CEERS Student Educational Project to Demonstrate Graphene Fuel Cell Catalyst	08/05/14	05/31/15	28,000	28,000
15388	Bevilacqua-Knight Inc.	Participate in California Fuel Cell Partnership for Calendar Year 2014 and Provide Support for Regional Coordinator	01/01/14	12/31/14	137,800	1,676,800

**Hydrogen Technologies and Infrastructure**

10046	Air Products and Chemicals Inc.	Develop & Demonstrate Renewable Hydrogen Energy and Refueling Station	12/21/09	04/30/15	750,000	8,436,735
10061	Hydrogenics Corporation	Maintenance & Data Management for the AQMD Hydrogen Refueling Station	10/30/09	12/30/13	368,000	368,000
11150	Hydrogen Frontier, Inc.	Maintenance & Operation of 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
13259	Air Products and Chemicals Inc.	Hydrogen Station Operation and Maintenance for Five Cities Hydrogen Program	03/26/13	03/31/15	390,000	390,000
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
15020	University of California Irvine	Develop Sampling and Testing Protocols for Analyzing Impurities in Hydrogen	08/31/14	04/12/15	114,500	114,500
15150	Air Products and Chemicals Inc.	Install and Upgrade Eight Hydrogen Fueling Stations Throughout SCAB (including SCAQMD's Diamond Bar Hydrogen Station)	10/10/14	04/09/19	1,000,000	17,335,439
15366	EPC LLC	Operate and Maintain Publicly Accessible Hydrogen Fueling Station at SCAQMD's Headquarters	10/10/14	09/14/17	0	0
15419	SunLine Transit Agency	Disposition of Dispenser from Electrolyzer Hydrogen Station Demonstration at SCAQMD's Headquarters	12/24/12	12/23/15	0	0

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD \$	Project Total \$
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**Health Impacts Studies**

12208	University of California Riverside/CE-CERT	Determine the Physical and Chemical Composition and Associated Health Effects of Tailpipe PM Emissions	01/21/12	01/31/16	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	07/31/15	368,457	368,457
14171	Southern California Research Center/Allergy & Asthma Associates of Southern California	Risk of Incident Asthma Among Children from In-Utero Exposures to Traffic Related Pollutants	09/22/14	03/21/16	99,670	317,119
14172	University of California Irvine	The Relation of Airway and Systemic Oxidative Stress to Particulate Air Pollution Exposures in an Elderly Cohort	02/17/14	08/16/15	159,974	376,368

**Stationary Clean Fuels Technology**

09303	Permacity Solar	Install 40kW (AC) Crystalline Silicon System at AQMD HQs	01/30/09	01/29/15	387,162	387,162
10723	Eastern Municipal Water District	Retrofit Digester Gas Engine with NO <sub>x</sub> Tech Aftertreatment Emission Control Technology	03/16/12	06/15/15	85,000	889,000
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
13045	ClearEdge (novated from UTC Power Corp.)	Energy Supply and Services Agreement to Install One 400 kW Phosphoric Acid Fuel Cell at SCAQMD Headquarters	09/28/12	09/27/22	450,000	4,252,680

**Outreach and Technology Transfer**

00069	Walsh Consulting	Technical Assistance Relating to the Use of Alternative Fuels in Mobile Sources	02/17/00	02/28/16	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
07062	The Tioga Group, Inc.	Technical Assistance Related to Air Quality Impacts of Regional Goods	12/19/06	11/30/16	58,000	58,000
08210	Sawyer Associates	Technical Assistance on Mobile Source Control Measures and Future Consultation on TAO Activities	02/22/08	02/28/16	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	06/30/16	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

Contract	Contractor	Project Title	Start Term	End Term	SCAQMD \$	Project Total \$
<b>Outreach and Technology Transfer (cont'd)</b>						
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
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
12376	University of California Riverside	Technical Assistance with Alternative Fuels, Biofuels, Emissions Testing and Zero-Emission Transportation Technology	06/13/14	05/31/16	75,000	75,000
12380	The Tioga Group	Technical Assistance Related to Emissions, Advanced Technologies and Goods Movement	04/13/12	04/30/16	25,000	25,000
12381	Integra Environmental Consulting Inc.	Technical Assistance Related to Emission Inventories, Goods Movement and Off-Road Sources	04/06/12	04/30/16	110,000	110,000
12453	Tech Compass	Technical Assistance with Alternative Fuels, Fuel Cells, Emissions Analysis and Aftertreatment Technologies	06/21/12	05/30/16	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
13194	Clean Fuel Connection Inc.	Technical Assistance with Alternative Fuels, Renewable Energy and Electric Vehicles	12/07/12	06/15/15	80,000	80,000
13198	Gladstein, Neandross & Associates, LLC	Technical Assistance with Alternative Fuels, Emissions Analysis and On-Road Sources	12/14/12	12/13/15	75,000	75,000
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
14185	Three Squares Inc.	Conduct Education Outreach for the Basin DC Fast Charging Network Project	04/11/15	06/30/15	49,183	49,183
15344	Clean Fuel Connection, Inc.	Technical Assistance with Alternative Fuels, Electric Vehicles, Charging and Fueling Infrastructure and Renewable Energy	09/22/14	09/22/16	60,000	60,000
15369	Breakthrough Technologies Institute, Inc.	Technical Assistance with Low- and Zero-Emission Vehicles, Fuel Cells, Stationary Applications and Emissions Analysis	11/07/14	11/06/16	30,000	30,000
15380	ICF Resources LLC	Technical Assistance with Goods Movement, Alternative Fuels and Zero-Emission Transportation Technologies	12/12/14	12/11/16	30,000	30,000
15415	Gladstein, Neandross & Associates, LLC	Technical Assistance with Alternative Fuels and Fueling Infrastructure, Emissions Analysis and On-Road Sources	11/07/14	11/06/16	60,000	60,000

## **Appendix C**

### **Final Reports for 2014**

## Purchase & Install CNG Fueling System at Long Beach Waste Transfer Station

### Contractor

Consolidated Disposal Service, LLC

### Cosponsors

CDS

MSRC/AB2766 Discretionary Fund

SCAQMD

### Project Officer

Larry Watkins

- 20,000 Gallon Vertical Storage Tank -12 Foot Diameter X 55 Foot High
- 10,000 scf Vaporizer
- Tanker Offload Pump Skid
- 2 Each LNG Fill Pump Skids
- 2 Each – 10 Gpm LNG Dispensers
- Universal card reader
- 28' X 28' X 3.5' High CMU Containment Wall
- LNG Control Panel
- LNG Electrical Panel (Power In Existing Building)
- Safety, Alarms Detection Systems

### Background

Consolidated Disposal Service (CDS), a subsidiary of Republic Services, is a solid waste collection and transfer business that operates from a 7 acre facility located on 67th and 68th Streets near Paramount Avenue in Long Beach, CA. The company has over 220 heavy duty vehicles that are used to support many local public and private customers in southern California. The facility has an existing gasoline/diesel fueling station and a maintenance repair garage originally designed for repairing heavy-duty diesel vehicles.

The SCAQMD adopted and later amended in April 2004 Rule 1193- for Clean On-Road Residential and Commercial Refuse Collection Vehicles that required any new heavy duty vehicles purchased by CDS be alternative fuel. CDS decided to purchase new LNG vehicles and consequently, to upgrade its existing repair garage to comply with California Fire Code requirements for LNG vehicles. Therefore, a new onsite LNG station must be constructed and the repair garage must be upgraded with mechanical ventilation/gas detection for LNG vehicle repair.

### Project Objective

The objective was to design, permit, install, maintain and operate a new, publicly accessible LNG fueling station at CDS's facility located at 67th Street, Long Beach, California, in order to support CDS's existing LNG fleet of 42 heavy-duty vehicles.

### Technology Description

The station features include the following:

### Status

The following tasks were completed:

1. Obtain City environmental and planning permits via city agencies and Boards
2. Provide calculations and conduct water pressure tests for the Fire Department
3. Identify all equipment components
4. Complete all engineering designs, drawings and specifications for the project using Weaver Electric as a sub-contractor
5. Obtain all City permits including electrical, mechanical, civil and fire permits
6. Fabricate the LNG tank, vaporizer and all other LNG specific equipment
7. Construct the LNG station and install equipment
8. Supervise the construction sub-contractor, General Physics, during the construction phase.
9. Connect the new LNG station to the existing CDS electric power supply system
10. Obtain approval from the City of Long Beach for a "Permit To Operate"
11. Fill the LNG tank and piping system with nitrogen and test for leaks
12. Fill the LNG tank, pumps and piping system with LNG and test the system for proper operation
13. Safety test all alarms, horns and shutdown systems

The station was completed on July 17, 2009. The 42 LNG refuse trucks in CDS's LNG fleet are now

fueling at the facility on a daily basis and public access is open.

**Results**

The new CDS LNG station has been fueling LNG vehicles since December 2009. The first month throughput was 86,000 gallons. The staff has been trained to use the new facility and CDS has negotiated competitive LNG fuel purchase contracts with local suppliers.

CDS was also responsible for the operation of the station for at least five years after commissioning, including providing annual reports and throughput data to SCAQMD through the life of this Contract.

**Table 1: Actual & Projected LNG Fuel Throughput**

Category	Current	2010	2014	2016 (Projected)
Number of CDS LNG Trucks	42	61	100	140
CDS Trucks*	655,200	951,600	1,560,000	2,184,000
Public Access Station**	50,000	50,000	100,000	100,000
<b>Total Annual Throughput</b>	<b>705,000</b>	<b>1,001,600</b>	<b>1,660,000</b>	<b>2,284,000</b>

CDS expects the emission reductions below from the LNG truck fleet:

**BY END OF 2010 WITH 61 TRUCKS**

(NOx) - 0.2 tons/year per truck = 12.2 T/yr

(PM10) - 0.01 tons/yr/ truck = 0.61 T/yr

**BY END OF 2016 WITH 140 TRUCKS**

(NOx)- = 28.0 T/yr

(PM10)- = 1.40 T/yr

There were many complex administrative, budget, permitting, design and construction obstacles during the 4 ½ year project cycle that were addressed and resolved.



**Figure 1: Original Site Layout**



**Figure 2: New LNG Facility**

**Benefits**

CDS trucks will no longer have to be driven over 15 miles roundtrip to a public LNG station for refueling nor repaired outside the garage. The new LNG station at CDS will provide LNG fuel for the CDS heavy-duty vehicle fleet, reducing both NOx and PM emissions. CDS can now purchase more LNG trucks with the goal of reaching a full LNG fleet by 2016.



**Figure 3: Modified 12 Bay Truck Repair Garage with Gas Detection, Mechanical Ventilation and Alarms**

**Project Costs**

The original projected costs were \$880,000. CDS incurred a cost increase of approximately \$370,000. Of this amount, \$270,000 is attributable to Chart’s construction costs from its subcontractors, additional technical consulting due to the complexities of the permitting process, and from additional work required by the City of Long Beach during extended permit negotiations. CDS also spent an additional \$100,000 on consulting and additional permit-required work. Final actual project costs totaled \$1,250,000. Co-funding was as follows: MSRC - \$297,981, SCAQMD - \$222,038, and CDS - \$729,981.



SCAQMD Contract #07051

March 2014

## Purchase & Install New Public Access CNG Fueling Station

### Contractor

City of Pasadena

### Cosponsors

MSRC/AB2766 Discretionary Fund  
SCAQMD

### Project Officer

Larry Watkins

### Technology Description

When the City of Pasadena began to explore the alternative fuel market, natural gas was recognized as the most popular and economical alternative fuel in this region. Utilizing natural gas powered vehicles, the City is able to significantly lower its vehicle emission levels while maintaining public service levels, lower overall fuel costs, and lower our dependence on imported oil.

### Status

On June 25, 2007, City Council authorized a contract to Gas Equipment Systems, Inc. in an amount not to exceed \$886,695 for the construction of a CNG Fueling Station. The total estimated cost for this project, including future expansion, increased from the engineers' original estimate of \$850,000 to \$1,230,520. This increase was due to rising costs of specialized equipment and services necessary for completion. To offset this overage, funds were appropriated and approved by the City Council to complete project construction. Station construction began on November 10, 2008 and passed building permit and Fire Department Compliance inspection on April 30, 2009. The station is now complete and the City has been fueling vehicles since March 12, 2009. The Final Report is being submitted at the same time of this report.

### Background

In 2001, the South Coast Air Quality Management District (SCAQMD) and the California Air Resources Board (CARB) began to adopt regulations that mandate public agencies to embark on effectively reducing vehicle Particulate Matter (PM) and Oxides of Nitrogen (NO<sub>x</sub>) emissions. These regulations pertain to On-Road medium and heavy-duty trucks; refuse collection vehicles, street sweepers, and transit buses.

In 2004, the City of Pasadena began an aggressive campaign to replace its heavy duty diesel fleet with clean CNG fueled vehicles. Since that time, the City of Pasadena has replaced 10 refuse trucks, and converted eight heavy duty diesel refuse trucks to dual fuel CNG/ diesel (a total of 60% of the refuse fleet). Also, the City has replaced two street sweepers, three sewer trucks and one aerial bucket truck with CNG powered vehicles.

### Project Objective

The objective of this project was to construct a CNG fueling facility to support the City of Pasadena natural gas powered vehicles and equipment, comply with all rules and regulations issued by CARB and the SCAQMD, while maintaining full services for the general public and to promote the use of alternative fuel. The limited access facility is also available on an emergency basis to the general public.



Figure 1: CNG Station Filter Dryer & Compressor at City Yard



**Figure 2: City CNG Refuse Trucks at Slow-fill Filling Posts**

**Results/ Benefits**

The City of Pasadena has replaced 16 and converted eight heavy-duty trucks. We also have three heavy-duty refuse collection trucks in line for replacement and are preparing to advertise a notice inviting bids in the upcoming months. By replacing these diesel vehicles with CNG powered vehicles, the City of Pasadena has reduced Nitrous Oxide emissions by more than 1.8 tons while diesel particulate matter is also being reduced.

**CNG Use by Therms**

March Therms Used	4,152
April Therms Used	8,806
May Therms Used	8,658
June Therms Used	10,130
July Therms Used	9,606
Total Therms to Date	41,352

**Funding Sources**

City of Pasadena	\$870,520
SCAQMD	\$165,000
MSRC	\$195,000
TOTAL	\$1,230,520

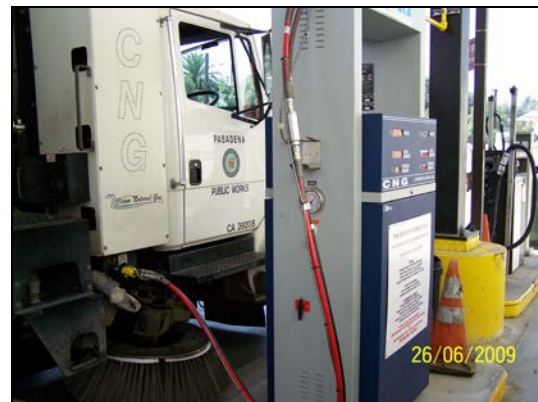
**Commercialization and Applications**

The City of Pasadena has been replacing its heavy-duty diesel engine fleet to vehicles powered by cleaner Compressed Natural Gas (CNG) engines. We also experienced a longer than expected construction time. We presented the contractor with the “Notice to Proceed” on September 21, 2007 with final permits signed off April 30, 2009 one year and seven months later. The initial fuel station design was based upon the 2001 California

Building Code. In January 2008, the City adopted the 2007 California Building Code. To reflect changes in the 2007 California Building Code and receive Plan Check approval, the station’s engineering design needed revisions, thus requiring additional labor and material to comply with this regulation. Additionally, data lines and conduits required an upgrade in order to transmit station data to the existing Fuel Management Database and Software System. Repairs to asphalt areas were needed due to damage caused by open trenches and normal traffic patterns at the station location. Also the installation of additional safety measures to protect the gas line necessitated additional change orders.

The City plans to operate this facility for many years while continuing to convert its heavy duty diesel fleet to CNG where available, and expand the station capacity when needed.

The City’s largest obstacle currently, is vehicle and engine manufacturers not producing an OEM product. Currently refuse chassis are available in a 50,000 – 60,000 pound Gross Vehicle Weight Rating (gvwr) chassis. Smaller 25,000 – 40,000 pound gvwr chassis are not available in an OEM CNG powered configuration such as dump trucks. Additionally, heavy duty engine manufacturers such as Detroit Diesel and John Deere have stopped producing CNG engines. The only company currently manufacturing the heavy duty CNG engine is Cummins. As the use of natural gas has become more popular and if manufacturers could produce more vehicles, state governments, municipalities, and the general public would be more likely to purchase them. This would lower emission levels and we could lower our dependence on imported oil.



**Figure 3: City CNG Street Sweeper at Fast-fill Dispenser**

## Upgrade Existing Public Access CNG Fueling Stations in Thousand Palms & Indio

### Contractor

SunLine Transit Agency

### Cosponsors

SunLine Transit Agency  
SCAQMD

### Project Officer

Larry Watkins

### Background

Over the last four years, SunLine has had complaints with 3600 psig vehicle customers because the CNG public fueling stations could not fully fill these vehicles to about 4200 psig temperature compensated during the summer months. Currently, all new CNG vehicles are designed with the 3600 psig option and 100% of all CNG vehicles in the Coachella Valley are designed with 3600 psig.

### Project Objective

The main objective was to upgrade the CNG stations and incorporate new transit 3600/3000 psig dispensers, upgrade the priority panel, install new 4500 psig storage and upgrade the public fuel island dispenser.

A facility performance specification was developed for the station that met SunLine's short- and long-term fueling requirements for a fast-fill and time-fill CNG fueling station. This included detailed plot plans, P&IDs, electrical 1 line drawing, a ROM schedule, and a 10% accuracy project estimate. SunLine and the construction contractor provided generic equipment specifications for major equipment such as the CNG compressors, CNG dispensers, CNG storage vessels/tanks, and etc. for either purchase. There were two (2) projects at the Thousand Palms facility to resolve the low pressure issues and problems and there were also two (2) projects at

the Indio facility to resolve these same issues and problems.

### Technology Description

There were many changes done to both stations with this project. Upgrades to the Thousand Palms transit island consisted of a new dispenser, adding additional storage and modification to the public access dispenser program to the dispenser EPROM with no additional modification to the dispenser. The Indio station had similar changes to the transit island along with an identical new dispenser, new card reader; and the public access island was widened to accommodate larger vehicles.

### Status

This project has been in operation at various stages since November 2008. With the upgrades completed, both stations are now able to provide adequate fills to the 3600 vehicles at the transit and public fuel islands. As of April 2009 the station upgrades have been completed and are in full operation.



Figure 1: Public Fuel Island

Once commissioned SunLine was required to provide the SCAQMD five years of annual reporting including throughput through 2013-14 under this Contract.

**Results**

After completion of the project no further complaints have been documented. Transit buses can now be filled to the required 3,600 psig. The transit buses have not been towed in and are not being exchanged for low fuel. The Thousand Palms public fuel island has been able to fast-fill medium size vehicles up to the temperature compensated amount of 4200 psig or more and no problems are expected during the summer months.

The Indio public access upgrade was accomplished with little impact to public fueling. Large vehicles are now able to get in and out of the fuel island with relative ease. The Transit Island now accepts fleet cards and is used for overflow traffic and emergencies when the public access is down for maintenance. This project-- even though it was initially delayed due to competitive bid approvals, personnel and contracts reviews and equipment delivery delays-- had immediate positive impact on the station operation and customer satisfaction.

**Benefits**

Efficiency in the transit and dial-a-ride service has been observed from the 3600 psig fills. Other medium-size fleet vehicles are now receiving full fills to 3600 psig which also increase their efficiency; less time refueling and less number of fill per day but an increase in volume.

With the additional buses it was anticipated the fleet would grow to 66 CNG buses with at least a 5% increase in throughput for both stations. The upgraded stations were anticipated to increase throughput by 60,000 to 70,000 GGE per year.

This contract required five years of annual reporting including throughput, which was reported as follows:

Throughput in GGEs	
2009-2010	1,244,978
2010-2011	1,262,315
2011-2012	1,417,419
2012-2013	1,548,619
2013-2014	1,664,929

This throughput met the projected throughput for this project.

**Project Costs**

The final cost of the project was higher than the original estimate of \$180,000 by 12%; final equipment and costs were \$200,792. The SCAQMD provided \$90,000 toward this project, with the remaining funds provided by SunLine. The card reader along with the internal cost to manage the project and support the contractors was an additional \$45,800, all of which was funded by SunLine, for overall project costs of \$246,834.

**Commercialization and Applications**

Overall, the improvements of the project were well received.

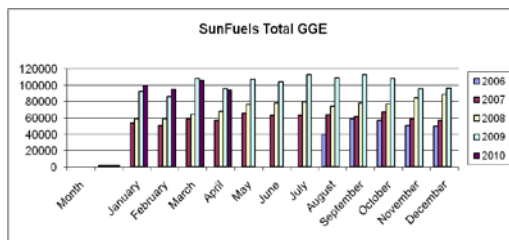


Figure 2: Throughput 2006 to April 2010

# Purchase & Install New LNG Production Facility Using Landfill Gas from Altamont Landfill in Livermore

## Contractors

USA Waste of California, Inc.

## Cosponsors

SCAQMD

CARB

California Integrated Waste Management Board

## Project Officer

Larry Watkins

## Background

The project involves the construction and development of a landfill gas to liquefied natural gas (LNG) plant facility at the Altamont Landfill located near Livermore, California, which will be used to fuel WM's fleet of LNG vehicles in California and to supply other customers. A joint venture (High Mountain Fuels, LLC) between Waste Management (WM), the largest provider of solid waste collection, recycling and disposal services in North America, and Linde BOC, one of the largest industrial gas and cryogenics companies in the world.

## Project Objective

The objective of the project was the design and installation of an LNG production facility at WM's Altamont Landfill in Livermore CA, through the development of an onsite purification and liquefaction facility for the recovery and conversion of renewable biomethane to LNG as a transportation grade fuel. It represents the largest demonstration of onsite purification and liquefaction of landfill gas recovery in North America and further exhibits the technical and economic viability of this renewable resource as a transportation fuel. By providing an additional LNG source for WM's LNG fleet and other California LNG fleets, the project helps expand the supply of lower carbon, renewable LNG and promotes

overall LNG consumption in the South Coast Air Basin and other areas in California.



LNG Facility at WM's Altamont Landfill

## Technology Description

The process implemented at the project facility uses a multi-stage gas clean-up approach which targets the removal of chemical families of compounds rather than "key" species. The technology processes raw landfill gas by removing unwanted components such as carbon dioxide, nitrogen, hydrogen sulfide, moisture, and reactive compounds. Third party patented liquefaction technology is then used to liquefy the processed landfill gas into LNG. Additional methane recovery from the landfill co-produces all power requirements for the system (gas and refrigeration compressors, controls, transfer pumps, auxiliaries, etc.) through onsite electricity generation. The final product is stored on-site in an insulated cryogenic tank until it is trucked via 10,000 gallon capacity tanker truck to existing LNG dispensing locations within California.

## Status

Construction of the plant facility was completed and in September 2009 it first began commercial operation successfully producing LNG. At that time the plant was still in start-up phase, with certain operational debugging activities ongoing.



It was anticipated the facility would operate at 60% of capacity during the first year.

Preliminary engineering for the site was completed in December 2007 and the site design and gas analysis were completed in August 2008. The majority of the equipment was delivered and installed in March and April of 2009. Commissioning of the facility began in May 2009. Feed gas was introduced in mid-July 2009 and the plant first began producing LNG in September 2009.

Once commissioned, USA Waste of California was required to provide the SCAQMD five years of annual reporting including throughput through CY 2013 as below:

Volume (gallons)	
2009	375,363
2010	1,951,448
2011	2,687,108
2012	2,739,365
2013	2,128,144

### Results

At the commencement of the project, the primary goal was to construct an LNG production facility with an operational capacity to consume approximately 2,600 scfm of collected landfill gas and produce 13,000 gallons per day of LNG. The technical goals were to remove contaminants to purify the methane fraction, liquefy it by cooling to cryogenic temperatures, storing on-site, and supplying LNG to WM’s waste hauling fleet and other customers. These goals will all be met by the facility. The initial volume of LNG produced by the facility appears to yield a high quality transportation fuel, with methane content greater than 98%. The rated capacity of the plant should meet or exceed the performance specifications when running at full capacity. The facility will continually collect performance data for the systems operation.

### Benefits

Use of this LNG as a transportation fuel will displace 2.8 million gallons of diesel fuel consumption and reduce CO2 emissions by 31,800 tons per year, while lowering NOx and particulate emissions and helping reduce reliance on foreign petroleum imports. WM plans to use the LNG from this facility to fuel a portion of its waste collection fleet, thereby offering a true

“closed loop” sustainability solution. Moreover, by expanding the supply of renewable LNG produced in California, this plant will help promote overall LNG consumption in the South Coast Air Basin and other areas of California, thereby helping to achieve California’s low carbon fuel standard and its desire to reduce greenhouse gas emissions.

### Project Costs

The budget to construct and commission the facility was \$15.38M. Actual costs have been close to these budgeted amounts. Funding for the project was provided primarily by the High Mountain Fuels joint venture partners (WM and Linde BOC), with \$300,000 in funding being provided by the SCAQMD, and an additional \$1.15M provided by CARB and CIWMB collectively.

### Commercialization and Applications

A brief examination of the population of landfills in California provided by the Landfill Methane Outreach Program indicates that there are between 17-36 landfills in the state that are sized to generate landfill gas quantities necessary to develop similar commercial-scale LNG facilities. Current estimates indicate that if all of the sites were developed, they would displace diesel fuel supply by approximately 250,000 gallons per day. Additionally, California’s total current biomethane resources (which also includes waste water treatment plants, and dairy and swine sources) are estimated at 125 bcf, which could displace over 900 million gallons of diesel fuel a year if converted to LNG and used as a transportation fuel. If only 10% of this biomethane is used for vehicle fueling, it could offset California’s need for imported diesel fuel by over 90 million gallons per year, which would avoid fossil fuel CO2 emissions of 1.9 million pounds on an annual basis.

This facility will hopefully serve as a model for similar facilities in California to utilize indigenous biogas resources and displace non-renewable fossil fuels.

## Repower Four Off-Road Construction Vehicles

### Contractor

TNT Blanchard (formerly TNT Grading, Inc.)

### Cosponsors

SCAQMD  
TNT Blanchard

### Project Officer

Richard Carlson

### Background

Based on the California Air Resources Board (CARB) OFFROAD 2006 emission model, there were approximately 68,600 diesel-powered off-road construction vehicles in the Basin in 2006, which together produced approximately 120 tons per day of NO<sub>x</sub> and 7.5 tons per day of PM emissions. In order to reduce diesel emissions of NO<sub>x</sub> and PM, the SCAQMD provided incentive funding to operators of diesel-powered off-road construction vehicles to upgrade and modernize their fleets.

On July 13, 2007, the SCAQMD Board awarded a contract to TNT Grading, Inc., to repower thirteen Tier 0 diesel-powered off-road construction vehicles with new Tier 3 diesel engines in an amount not to exceed of \$1,231,481 from the Clean Fuels Fund. This project was one of several funded as part of a required match for Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer Program) projects and was administered according to the 2007 Carl Moyer Program Guidelines.

### Project Objective

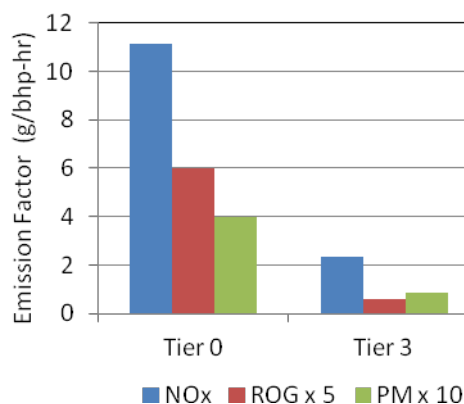
The purpose of this contract was to reduce emissions from diesel-powered off-road construction vehicles by repowering them to meet CARB Tier 3 emission standards, the most stringent at that time.

### Technology Description

A repower is the replacement of the existing engine with a new lower emission CARB certified-engine. The repower consisted of removing the existing engines and accessory components and installing new engines and associated accessory components. The repower was performed by an independent Caterpillar mechanic using Caterpillar factory engines and accessories along with specially fabricated components (brackets, wire harnesses, hoses, etc.) needed to fit the new engine into the old vehicle.

Repower is typically more cost effective in reducing emissions than replacing a vehicle, due to the higher cost of a new vehicle compared to just a new engine. The emission reduction from Tier 0 to Tier 3 is 78% for NO<sub>x</sub> and PM and 90% for ROG (reactive organic gases). The following chart illustrates the difference in emissions between Tier 0 and Tier 3 engine emission factors.

Carl Moyer Program Emission Factors



### Status

Four scrapers of the type shown below were repowered in 2007 and 2008. Beginning in 2008, construction activity was substantially reduced in the Southern California region due to the severe economic recession. As a result, the contractor did not repower the remaining off-road construction vehicles. The unused contract funds

were returned to the Clean Fuels Fund for use on other projects.



**Caterpillar 657B Scraper Repowered to Tier 3**

## **Results**

The repowered vehicles were inspected to confirm that the repower was completed properly, the old engines were functionally destroyed, and the repowered equipment was fully operational.

## **Benefits**

The emission benefit of the repowers was calculated according to the Carl Moyer Program Guidelines. The Tier 3 engines in the four repowered scrapers were estimated to reduce emissions by 23 tons/year NOX+ROG and 0.81 tons/year PM compared to the original Tier 0 engines.

## **Project Costs**

A total of \$377,801 from the Clean Fuels Fund was paid to the contractor. In addition, the contractor paid another \$124,336 for a total project cost of \$502,137. A total of \$853,680 was returned to the Clean Fuels Fund as a result of the reduced project scope.

## **Commercialization and Applications**

Repower technologies using Tier 3 diesel engines for off-road construction vehicles are commercially available for a variety of off-road vehicles. However, the current emission standard is Tier 4, and repowers using Tier 4 engines are generally not technically feasible in older off-road vehicles. Incentive funds are now mainly used for new equipment replacement projects meeting Tier 4 standards.



## Upgrade Existing Full Public Access CNG Fueling Station in Whittier

### Contractor

Pupil Transportation Cooperative

### Cosponsors

SCAQMD

Pupil Transportation Cooperative

### Project Officer

Larry Watkins

### Background

Pupil Transportation Cooperative (PTC) is a state sanctioned Joint Powers Authority serving seven area public school districts in the Whittier area. The agency serves over 4,000 students daily and operates 138 school buses, 25% of which are powered by compressed natural gas (CNG). PTC uses a time-fill system to fuel its alternative fuel buses and operates a public access CNG station first built with the help of SCAQMD funding in 1998.

PTC is committed to improving air quality and providing a safe and healthy environment for its student riders by expanding its fleet of alternative fuel school buses. PTC operates in a highly polluted region bounded by Interstate 5 on the south, State Highway 60 on the north, Interstate 605 on the west and the Orange County boundary on the east. The agency qualifies for funding based in part on the area's AB 1390-Environmental Justice designation due to its low-income status and disproportionate impact caused by air pollution in the area.

### Project Objective

It was the goal of this project to upgrade the agency's CNG fueling infrastructure to support its growing fleet of clean-air school buses and offer a reliable CNG fueling station for public use.

The existing ten-year old fueling infrastructure had experienced numerous maintenance failures and operational problems dating back to May 2005. In addition to jeopardizing the efficiency of the daily school bus operation dependent on the time-fill system, the public access fueling station was routinely out of order, effectively discouraging its use by operators of CNG-powered vehicles.

The upgrade was to include installing a new compressor and relegating the existing

compressor system as backup; installing a new CNG fuel dispenser for the public access station; making safety modifications to the vehicle maintenance shop; and installing related electrical upgrades. Burnett & Burnette was enlisted for engineering, design and project management services for the project.

### Technology Description

The new CNG public access fueling station upgrade includes a new ANGI two-hose dispenser for 3000 and 3600 psi fueling certified by the Los Angeles County Department of Weights & Measures; a new ANGI 75 scfm compressor as the primary with the existing twin 58 scfm compressors in stand-by; related electrical upgrades; and maintenance garage modifications that include removal of ignition sources and flame hazards and the installation of Scott mechanical ventilation fans in each of the three work bays and a Rel Tek gas detection and alarm system.

### Status

PTC's consultant Burnett & Burnette issued a formal project completion notice based on a final inspection and acceptance on April 30, 2009, on schedule and slightly under budget. This contract was complete on June 2014 after five years of annual reporting was provided to the SCAQMD.

The capacity of the new compressor was changed from 100 scfm to 75 scfm to meet available site supply gas pressure and to conserve costs. No other significant problems with the procurement of equipment, installation and related construction activities were encountered. System upgrades have resolved the maintenance and operational problems that had plagued the system in past years. To help ensure continued trouble-free operation, PTC also switched station maintenance providers.



Figure 1: Public Access Fueling Station

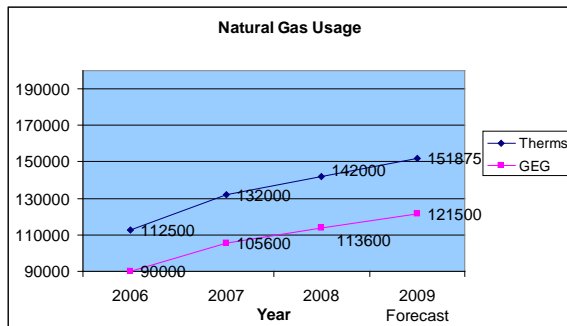


Figure 2: Time-fill Posts Refueling School Buses

## Results

As depicted in the graph below, the increase in CNG usage has exceeded the projections contained in the October 2006 grant submittal by nearly 20%. The change in the station’s ownership and a renewed focus on the station’s operational readiness and reliability has resulted in increased fuel throughput at the public access station beyond projections. The addition of seven CNG school buses to the PTC fleet also contributed to increased CNG throughput overall.

The upgraded fueling infrastructure, with its primary and back-up compressors, will support increased usage of the public access station, the fueling needs of a significantly expanded fleet of CNG school buses, and will serve to reduce pollution and improve air quality overall by reducing diesel fuel consumption.



## Benefits

Since the submittal of the grant application, the fleet of alternative fuel school buses at the agency has increased by 25% to a total of 35 CNG buses. There has been a reduction in CO, NOx and PM of 20% - 30% when compared to tailpipe emissions from diesel-powered buses. A new customer to the public access station operates a fleet of CNG-powered trash collection trucks which has resulted in a reduction of approximately 40% in CO, NOx and PM when compared to diesel-powered refuse trucks.

An added benefit of using CNG is fuel cost savings realized by operating CNG buses instead of buses powered by higher-priced diesel fuel.

## Project Costs

### Original Estimated Project Costs

Funding Source	Fueling Station	Garage	Total
Infrastructure Funds from School Bus Grant	\$42,846	0	\$42,846
Total PTC Contribution*	\$70,000	0	\$70,000
SCAQMD Contract	\$132,154	\$55,000	\$187,154
<b>Total</b>	<b>\$245,000</b>	<b>\$55,000</b>	<b>\$300,000</b>

\* Note: Funds will be recovered by PTC from future Federal Excise Tax Rebate Program proceeds and projected fuel savings due to lower costs for CNG versus diesel.

The SCAQMD contract covered up to \$187,154 or 63% of project costs, whichever is less. Pupils’ funding share was estimated at \$112,846, or 37.6%.

### Project Costs - Actual

Compressor/Fuel Dispenser	\$111,700
Panels/Controls	\$24,000
Electrical	\$24,300
Equipment-Garage	\$38,000
Construction-CNG	\$24,800
Construction-Garage	\$26,900
Training	\$3,000
Sub-total	\$252,700
Project Management	\$19,000

**Total Project Costs \$271,700**

### PTC Contributions – Actual

Total PTC Contributions	100,529
-------------------------	---------

Because SCAQMD Contract #08101 could not exceed 63% of the project costs, PTC was only eligible for \$171,171. PTC’s final funding share was \$100,529 or 37%.

## Commercialization and Applications

The primary applications for this project are the establishment of a reliable, on-site time-fill fueling system for the agency’s school bus fleet which currently comprises 35 CNG-powered buses and the provision of a CNG public access fueling station for public and private operators of CNG vehicles in the area. The updated fueling infrastructure will support current fueling needs and planned future expansion of the CNG school bus fleet. The updated public access station will provide reliable, 24-hour access to CNG fuel for commercial fleets and private vehicles. Fuel throughput has increased steadily for the last three years as the reliability and availability of the fueling station has improved. The public access station is situated on a busy thoroughfare and it is expected that directional signage on surrounding streets and freeways will help increase station usage. The redundant compressors on the upgraded system will support expanded public access station use and increased fuel throughput.

SCAQMD Contract #09308

November 2014

## Maintain & Manage SCAQMD's Diamond Bar Headquarters' Fast-Fill CNG Refueling Station

### Contractor

Trillium CNG (formerly Pinnacle)

### Cosponsor

SCAQMD

### Project Officer

Phil Barroca

### Background

The SCAQMD has maintained a fast-fill CNG station at its Diamond Bar Headquarters (HQ) since January 2003. Since the station's opening, SCAQMD has contracted with Trillium CNG (formerly Pinnacle) to operate, maintain and manage the station. Since commissioning in 2003, average throughput has risen by 1,000 gasoline gallon equivalents (GGEs) per month each year. The current monthly throughput rate of CNG dispensed is 14,000 GGEs per month.

Given the demand and equipment age as well as evolving operating conditions, SCAQMD recognized the need to evaluate how to move forward with its station, which serves SCAQMD, visitors doing business with the SCAQMD and the general public.

In consultation with Trillium and evaluation of state-of-the-art natural gas stations, it was estimated that it would cost nearly \$900,000 to upgrade the station including replacement of compressors and dispensers. Consequently, the SCAQMD decided the optimal course would be to seek a qualified CNG fuel supplier to assume ownership of the existing CNG station by purchasing existing fueling station equipment from SCAQMD and upgrade the station with the latest state-of-the-art fueling system equipment.

### Project Objective

The objective of this project was to ensure uninterrupted CNG refueling service at SCAQMD's publicly accessible CNG station in

Diamond Bar while deliberations were undertaken on how best to move forward given the aging station. This project provided additional funds to Trillium CNG to extend its contract for another six months.



**Figure 1: Public Access CNG, SCAQMD Headquarters, Diamond Bar, CA**

### Technology Description

The SCAQMD public access station utilizes a Pinnacle Systems CNG three stage ariel compressor and a proprietary two-stage, non-lubricated hydraulic intensifier compressor that delivers 400 scfm of CNG through three (3) two-hose dispensers, each with a 3600 psi and a 3000 psi delivery. The station utilizes a single tower gas dryer to reduce moisture content. Three CNG tanks provide 30,000 scf of onsite storage. Each dispenser has a credit card reader system accepting Visa, MasterCard, and Discover cards.

### Status

In late 2014, the SCAQMD Board approved the release of an RFP to solicit bids from contractors interested in assuming ownership and improving the SCAQMD CNG refueling facility. The Board also authorized execution of a consecutive contract with Trillium CNG to ensure continued operation of the station while the RFP process is undertaken. This contract, originally executed in 2009 with Pinnacle before their name change, was allowed to expire so a new interim contract could be negotiated with Trillium CNG. The CNG

station is currently operating without interruption and the RFP for a new owner/operator has closed and proposals are being evaluated.

Over the ten year life of this station there has been a steady increase in throughput, averaging 1,000 GGE/month year-to-year, with the average monthly throughput standing at nearly 14,000 GGE/month. The amount of fuel used by the SCAQMD vehicles has remained fairly consistent over the ten year operation of this facility at approximately 2,000 GGE/month. Fig 2. shows the steady increase in fuel throughput during this period, signifying a steady increase in public demand for CNG in this area.

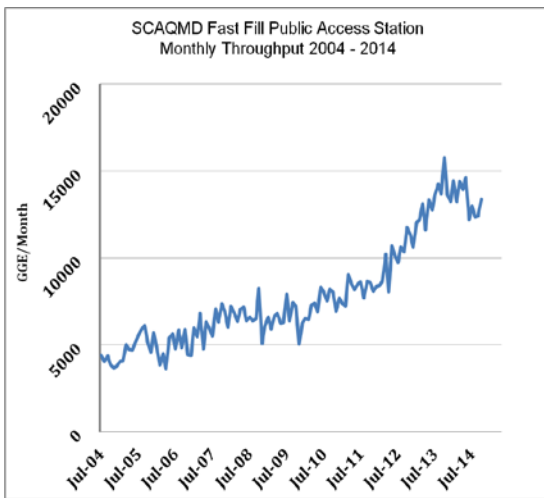


Figure 2: GGE/Month Dispensed 2004-2014

### Results

Currently, there has been no disruption in the operation and service of the SCAQMD’s public access CNG station. Furthermore, within a few months a new contractor should be taking over ownership and upgrading the CNG station with state-of-the-art equipment to not only meet current needs but future growth in demand.

### Benefits

The benefits associated with ensuring uninterrupted operation of SCAQMD’s public access CNG station is continued displacement of petroleum-based fuels and public support for natural gas vehicles. Figure 2 clearly demonstrates the continued and steadily increasing public demand for CNG in this region.

### Project Costs

Funding for this project was \$54,000. Costs for this project are based on a \$0.60/GGE service charge by Trillium CNG; an estimated monthly throughput of 14,000 GGE/month, and up to six months of service. The current service and maintenance contract with Trillium CNG does not include electrical costs and revenue generated from this station is used to pay for the gas dispensed at this facility, the cost of the service contract, taxes and other costs directly associated with the operation and maintenance of this facility.

### Commercialization and Applications

The growing demand at SCAQMD’s public access CNG station parallels on a smaller scale the growing demand for natural gas vehicles ranging from passenger class personal to commercial vehicles, e.g. taxis to heavy-duty vehicles such as school buses and refuse collection vehicles. Figures 3 and 4 provide a snapshot of the average amounts of CNG dispensed and the number of individual fueling events during a 24-hour period using a Sunday through Saturday from midnight to midnight in March 2014.

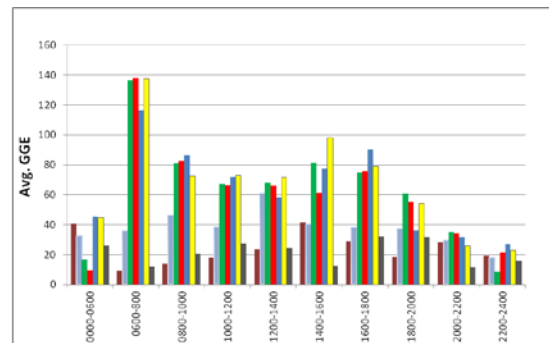


Figure 3: Avg. GGE Sun-Sat. (Mar.'14)

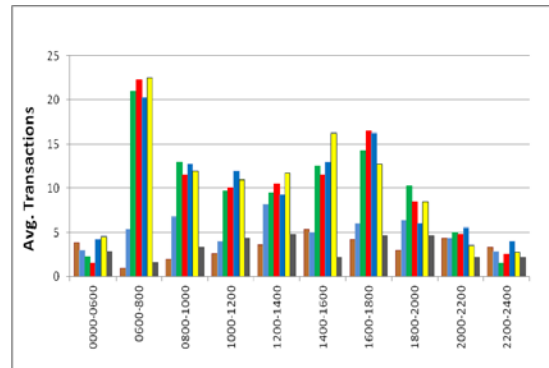


Figure 4: Avg. Fueling Episodes Sun.-Sat.(Mar.'14)



## Install Two LNG Fueling Stations at the Ports

### Contractor

California Cartage Company

### Cosponsors

Port of Los Angeles  
Port of Long Beach  
SCAQMD

### Project Officers

Dipankar Sarkar/Larry Watkins

### Background

California Cartage Company (Cal Cartage) has facilitated the deployment of 320 LNG alternative fuel heavy duty class 8 drayage tractors for use in the Southern California Ports of Los Angeles and Long Beach. These trucks have gone into service over the last two years as part of the San Pedro Bay Clean Truck Program.

Since 50% of the Cal Cartage truck fleet operates on LNG with limited retail availability, the possibility of fuel supply disruption was of great concern, especially since at the time there was only one LNG dispensing facility in the entire port area. Consequently, Cal Cartage applied for and was awarded funding from the SCAQMD to install two 6,000 gallon LNG storage and dispenser units in separate truck yard facilities. It is notable to recognize that while Cal Cartage was undergoing its alternative fuel installations this capacity increased to four dispensing facilities in the port area.

### Project Objective

The overall objective of this project was to increase the stability of the LNG supply to the overall port drayage fleet. This objective could be achieved by installing two LNG storage and dispenser units at two of Cal Cartage's truck yard facilities. The first dispenser would be installed at 6150 Paramount Blvd. in Long Beach; the second, at 1500 East Lomita in Wilmington.

### Technology Description

The two LNG storage and dispensing units are built by Chart Industries. They are self-contained skid mounted tanks and dispensing systems with point of sale card readers to control inventory and record sales. In addition, these self-contained dispensers have all necessary methane and fire detection sensors. Refurbishment of these two units included new pumps, metering sensors, PLC and control cabinet, valves rebuilt and all controls rewired.



Figure 1: Completed Project Paramount Blvd.

### Status

Cal Cartage contracted with Burnett & Burnett on April 27, 2010 to complete plans, drawings and permits for both Lomita and Paramount. Final permits were approved and construction started on the Paramount project on March 11, 2011. The Lomita Project was approved and started on July 7, 2011. General Physics was contracted to refurbish both QRS units on April 26, 2010. Work was completed on March 11, 2011.

Installation of the Long Beach unit was completed and signed off in February 2012; the Lomita unit was installed and signed off in early March 2012. Both systems are now up and running. The SCAQMD requires five years of annual reporting commencing one year after commissioning so this contract ends in April 2017.

Under the SCAQMD’s contract annual reporting on the station operation and throughput is required until early 2017.

**Results**

As a result of this project and the help from the SCAQMD and other partners, Cal Cartage has increased the use of natural gas vehicles over the last two and one-half years. The two LNG dispensers added to the local alternative fuel infrastructure are an important component to the continued successful operation and deployment of LNG trucks in the ports and surrounding operating environment. These two units bring added consistency and reliability to LNG availability in the Southern California Port area.

For the first six months of operation the two units have dispensed 912,982 gallons or 748,645 therms.

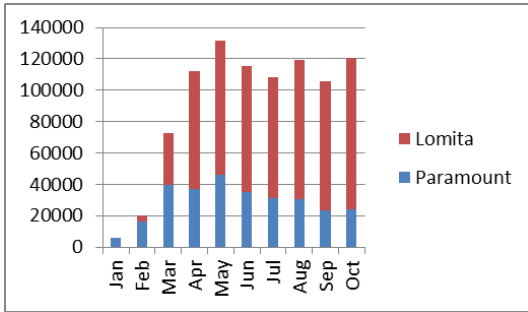


Figure 2: Volume Throughput Jan-Oct 2012

**Benefits**

At the time of this application there was only one LNG fueling facility available for port drayage trucks using LNG. Wait times for fuel at that location was up to two hours as LNG trucks must be fueled every day. Cal Cartage had 132 trucks and there were about 100 other LNG trucks in the port. There was real concern as to the future availability and stability of a consistent fuel supply. California Cartage Company decided to host two LNG dispensers at two of their truck yards to increase the infrastructure and availability of fuel. Since then the LNG fleet has grown to about 900 trucks total with Cal Cartage having over 300 in use today. Counting the two dispensers at these facilities there are now a total of six locations to get LNG for alternative fuel trucks.

The following chart demonstrates the increasing expansion of LNG fleets in the port area.

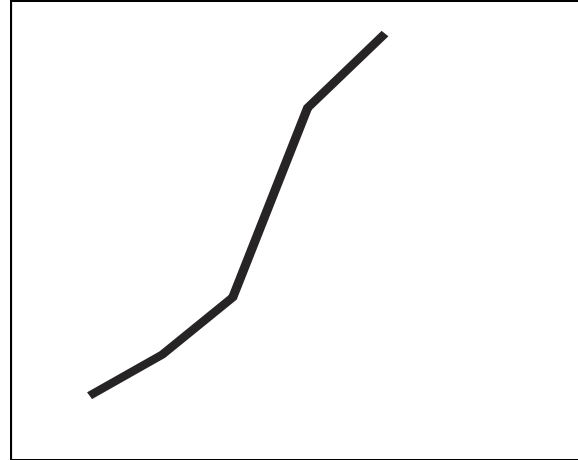


Figure 3: LNG Facilities vs Truck Service in Port Area

The additional LNG infrastructure afforded the industry the confidence to place additional LNG trucks into service at the two ports. As a result, the total LNG truck count is upwards of 900 LNG trucks. The air quality benefit of operating the LNG trucks versus diesel is as follows: 20% less GHG, 97% less carbon, and 1,000 tons per year in NO<sub>x</sub> reduction.

**Project Costs**

Original project costs were estimated at \$1,193,391. Cal Cartage applied for and was granted \$1,065,000 from the SCAQMD toward this project. Actual costs of the completed project were \$1,207,601, funded as follows:

SCAQMD	\$532,500
Port of Los Angeles*	\$266,250
Port of Long Beach*	\$266,250
Cal Cartage	\$142,601
<b>Project Total</b>	<b>\$1,207,601</b>

\*The Ports’ funds were pass-through via SCAQMD’s contract.

**Commercialization & Applications**

This project, although not new technology itself did support the growth of the LNG truck population in the port area. Additionally the project demonstrated to other potential LNG truck users that there is an opportunity to place fuel anywhere needed to support a fleet of low-emission alternative fuel trucks.

SCAQMD Contract #10055

December 2014

## Install New Public Access CNG Refueling Station in Santa Ana

### Contractor

Waste Management

### Cosponsor

SCAQMD

### Project Officer

Larry Watkins

### Background

Waste Management owns and maintains a facility for waste hauling trucks located at 1800 S. Grand Avenue in Santa Ana, California. The company planned for the installation of a compressed natural gas (CNG) fueling station, and received emergency funding assistance from the SCAQMD to help defray the capital costs for installing a new fast-fill fueling island that would be made accessible to other public and private vehicles during normal business hours at that location.

### Project Objective

Waste Management's objective was to install and operate a compressed natural gas fueling station at its location in Santa Ana, California.

The purpose of this project is to reduce emissions from heavy-duty refuse collection vehicles by installing the necessary infrastructure to fuel extremely low-emission natural gas vehicles. Waste Management will operate the compressed natural gas (CNG) station at its facility in Santa Ana, California.



Figure 1: Interior View of Completed Fast-Fill Fueling Island

### Technology Description

This project involves construction of a CNG station with the following new equipment and components:

- Three compressors, skid mounted
- Natural gas storage vessels
- Two 2-hose fast-fill dispensers capable of providing 3,600 psig fill pressures and certified by the California Bureau of Weights and Measures
- Regenerative dryer capable of meeting SAE J1616 moisture requirements
- Development of a separate fueling island area requiring the construction of a "U" shaped access area, the fuel islands and associated lighting, canopy and security systems
- Relocate existing refuse vehicle entry, security gate and fencing to allow entrance and exit for public and private fleet vehicles.

All equipment meets API, ASME, ISA, AGA, NEC, ISA and NFPA requirements.

### Status

Waste Management has completed construction of the fast-fill CNG station. The station has been operational since August 24, 2011.

Under the scope of this agreement with the SCAQMD, Waste Management constructed the CNG refueling station, including components to provide public and private fleet access with new equipment and components.

Waste Management was also responsible for the operation of the station for at least five years after installation and start of dispensing fuel, including providing annual reports and throughput data to SCAQMD through the life of this Contract. This administrative task was contracted to Gladstein, Neandross & Associates, Inc. (GNA).

### Results

The station will be responsible for cost-savings due to the lower cost of natural gas as a fuel, as

well as for the reduction of emissions that are ordinarily caused by diesel.

After construction of the fast-fill CNG refueling station was completed, it was made accessible to all public and private fleets. Some examples of fleets currently using the station include: the City of Santa Ana, Orange Cab, Yellow Cab, Santa Ana Public Works, CEVA Logistics, and the Dollar Store. Waste Management shall operate the station for at least five (5) years.

Annual throughput was anticipated around 100,000 GGEs. Actual throughput for the first three years was as follows:

Throughput in GGEs	
9/1/11-8/31/12	817,471
9/1/12-8/31/13	910,389
9/1/13-8/31/14	836,575

**Benefits**

The successful installation of this fueling station will provide the necessary infrastructure to fuel natural gas vehicles operated by Waste Management and other public and private fleets. Natural gas is a clean, safe and abundant fuel that is domestically produced, with 99 percent used in the U.S. coming from North America.

Natural gas contains less carbon than any other fossil fuel and thus produces lower carbon dioxide (CO2) and greenhouse gas (GHG) emissions per year. In fact, natural gas vehicles produce 20-30 percent less greenhouse gas emissions than comparable diesel vehicles. Natural gas is less expensive than diesel, costing less per energy unit.

Waste Management is quite familiar with the many benefits of natural gas, and maintains the largest fleet of heavy-duty natural gas trucks in North America. The fleet is currently comprised of over 1,000 natural gas vehicles. Approximately 80 percent of these natural gas trucks operate in Southern California. Waste Management is dedicated to doing business in the most sustainable way possible, as well as offering its customers more ways to live green via the air quality benefits of CNG.

**Project Costs**

The total cost of the new CNG fueling station was \$1,665,514. Waste Management was awarded \$250,000 from the SCAQMD as cost-share for the fast-fill public access portion of the

CNG station project. All other costs were paid by Waste Management.

**Commercialization and Applications**

This project will provide the additional necessary infrastructure needed in order to make alternative fuels such as natural gas a commercially available and preferable fueling option. Commercial fleet drivers and owners of CNG-equipped vehicles can now fuel at Waste Management’s new Santa Ana station.



**Figure 2: Front View of Fast-Fill Island**

Additionally, public and private fleets will be encouraged to switch to natural gas as additional infrastructure is available due to both the environmental and cost-saving benefits. This project is also beneficial to those vehicles subject to Rule 1193, which requires public and private solid waste collection fleets having exclusive contracts with public entities and greater than 15 trucks to purchase or replace existing vehicles with alternative fuel vehicles when procuring vehicles.

Waste Management remains committed to reducing emissions and creating cleaner solutions, such as the construction of alternative fuel natural gas fueling stations for its fleet and others within the neighborhoods where Waste Management’s employees work and live.



SCAQMD Contract #11561

October 2014

## Purchase & Deploy 34 CNG Shuttle Vans

### Contractor

SuperShuttle International, Inc.

### Cosponsors

SCAQMD  
SuperShuttle  
U.S. Dept. of Energy

### Project Officer

Phil Barroca

### Background

In 2009, the SCAQMD Board recognized funding from the U.S. Department of Energy (DOE) 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 is 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. The project provided co-funding with SuperShuttle to purchase and deploy thirty-four (34) Ford E-350 passenger vans converted to operate exclusively on compressed natural gas (CNG) for a minimum of two years.

### Technology Description

The project involves the purchase of thirty-four (34) new Ford E-350 Super-Duty XLT 12-person vans converted to operate on dedicated CNG. The base vehicle is equipped with an OEM installed gasoline-powered engine, specifically a Ford 5.4-liter V-8, Flex Fuel engine with 16 valves, electronic fuel injection, 255 rated h.p., 33 gallon gasoline fuel capacity, with a city / highway rated fuel economy of 12 and 16 miles per gallon, respectively. The vehicle is classified as medium-weight with a gross vehicle weight rating (GVWR)

of 8,000-lbs. The base, gasoline-powered vehicle is CARB-certified and emission categorized as an ULEV. Following conversion to dedicated CNG, the vehicle is CARB-certified and emission categorized as a SULEV. Each vehicle has 20 gasoline gallon equivalents (GGE) of on-board CNG fuel capacity and three Type 1 CNG tanks.

### Status

All thirty-four (34) Ford E-350 Super Duty XLT vans were purchased and all 34 vehicles converted to dedicated CNG with a CARB-certified conversion system. All CNG conversion systems were manufactured by BAF Technologies and were installed at BAF in Dallas, TX. The purchase, conversion, and subsequent deployment of these vehicles occurred in two phases. The first phase included twenty (20) 2011 model year vehicles, and the second phase included the remaining fourteen (14), all 2012 model year vehicles. The first vehicle was deployed in the fourth quarter of 2011, with additional vehicles phased into service over a one-and-a-half year period. Full deployment of all 34 vehicles was achieved in the second quarter of 2013. All vehicles were used to provide ground transportation passenger shuttle service to and from Los Angeles International Airport (LAX), Long Beach Airport, Ontario International Airport, John Wayne Orange County Airport and various destinations extending as far as 140 miles from LAX. Per DOE requirements, the project requires quarterly reports on both fuel usage and mileage for each vehicle.



Ford E-350 Super Duty XLT Vans

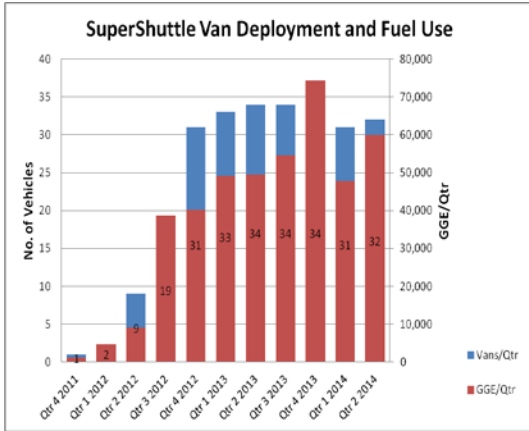


Table 1 – Van Deployment and Fuel Use

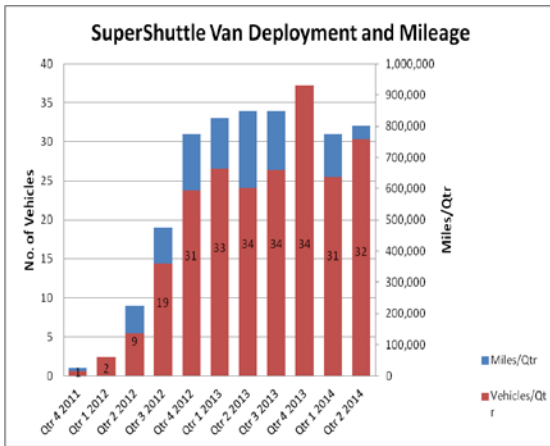


Table 2 – Van Deployment and Miles

Thirty-four vehicles were deployed over a two year period; and all 34 were in operation concurrently from the second quarter of 2013 through the fourth quarter of 2013. The last quarter of 2013 was also the highest quarter of miles accrued during this project.

### Results

During the seven quarter period in which all or most of the vehicles were in continuous operation, the vehicles collectively amassed more than 4.6 million miles, and displaced more than 400,000 gallons of gasoline. Vehicle miles ranged from 66,000 to 230,000 miles over the project life; for the 34 vehicles the average vehicle miles travelled was 135,000 miles, and the average fuel consumed per vehicle over the project life was 9,750 GGE, resulting in a fuel consumption rate of 14 miles per gallon.

The 2012 Ford E-350 Super-Duty XLT van is classified as a medium-duty vehicle with a GVWR of 8,000-lbs. Based on CARB Executive Orders and the certified emissions for both the Ford OEM gasoline-powered version of this vehicle and the BAF CNG-powered version of this vehicle, the CNG-powered vehicle emits 47% less emissions in terms of hydrocarbon + NOx emissions. All 34 vehicles produced over 700 lbs per year less emissions than their gasoline counterparts.

### Benefits

Relative to its gasoline-powered counterpart, the CNG version of this vehicle is 47% cleaner in hydrocarbon + NOx 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 these vehicles are expected to produce increased benefits over their full life. Based on full-life projections of 200,000 to 300,000 miles per vehicle, these 34 vehicles collectively will displace the use of 480,000 to 720,000 gallons of gasoline over this projected lifetime/usage.

### Project Costs

The total amount spent on vehicle purchase and conversion to dedicated CNG is calculated at \$1,431,894. The total funding award to this project was \$464,900 comprising \$123,000 from the DOE and \$341,900 from the SCAQMD. A Final Report on this project has been completed and is on file.

### 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, and the concurrent displacement of petroleum based fuels.

## Demonstrate Natural Gas-Powered Police Pursuit Vehicle

### Contractor

A-1 Alternative Fuel Systems

### Cosponsor

SCAQMD

### Project Officer

Phil Barroca

### Background

In November 2011, the SCAQMD Board approved \$65,000 from the Clean Fuels Fund to lease and demonstrate with local police jurisdictions a new 2011 dedicated compressed natural gas (CNG)-powered Ford Crown Victoria (FCV) Police Pursuit Vehicle (PPV). The Contractor on this project was A-1 Alternative Fuel Systems (A-1), based in Fresno, CA. A-1 performed the conversion of the vehicle to CNG, coordinated with Wondries (Alhambra, CA) on a two year lease and maintenance of the vehicle, and with 10-8 Retrofit (Ontario, CA) on the various vehicle up-fittings. At the outset of the program, fifteen (15) cities and police jurisdictions expressed an interest in demonstrating this vehicle.

### Project Objective

The project objective was to provide local law enforcement agencies the opportunity to demonstrate a fully equipped police pursuit vehicle that is powered by dedicated CNG to both reduce emissions and to potentially reduce department operating costs. The demonstration vehicle was built on the same platform as the ubiquitous gasoline FCV used by law enforcement agencies for many years and prepared for regular deployment and routine police service. The police departments and officers demonstrating this vehicle were asked to subject the CNG vehicle to the same rigors as their regular PPV and to evaluate and assess the CNG vehicle's performance. Officers were provided with a prepared survey to score various parameters, and to provide comments. The survey was considered

critical to better assess the vehicle needs of police departments and their officers.

### Status

The contract to demonstrate the CNG PPV was executed in April 2012. The FCV PPV was secured from Wondries Ford and the vehicle was converted to dedicated CNG by A-1 in June 2012. The vehicle was transferred to 10-8 Retrofit for up-fitting of the hard rear seat, light bar and siren, push bumper, prisoner screen, shotgun rack, and multijurisdictional radio. All up-fits were completed by October 2012. The first city to demonstrate the vehicle was Monterey Park, followed by Sierra Madre, Pomona, San Fernando, and Orange. The vehicle was also showcased at the Alt Fuel Expo in Santa Monica in September 2013. The demonstration program concluded in December 2014; the vehicle was returned to Wondries Ford with approximately 6,000 miles, for potential sale.

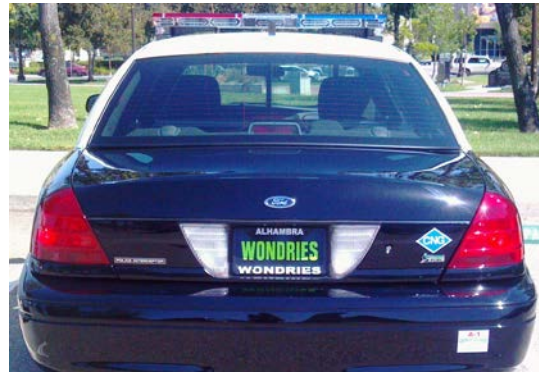


Figure 1: 2011 CNG FCV Police Pursuit Vehicle

The demonstration vehicle was a new 2011 gasoline-powered Ford Crown Victoria (FCV) that was converted to dedicated CNG-power using an EPA-certified Evotek (Impco Technologies) CNG conversion system with a CARB equivalent emission ranking of LEV2 SULEV. The 2011 FCV is equipped with a 4.6L V8 flex fuel engine with 250 h.p. and 297 lb-ft. torque. The gasoline vehicle is equipped with a 19 gallon fuel tank; an estimated city/highway fuel economy of 14/21 mpg, and is CARB certified LEV 2 ULEV. The CNG-powered vehicle's gasoline tank was

removed and initially replaced with two 3.4 GGE tanks in the trunk, and two 2.7 GGE tanks under body. An additional 2.7 GGE tank was added in the trunk to provide extra use and range bringing the total CNG fuel capacity to 14.9 GGE. The net added weight to the vehicle, primarily from the CNG tanks, was 450-lbs. The added weight and positioning of the fuel tanks in the trunk area prompted comments about “bottoming-out” of the rear of the vehicle and the subsequent installation of heavy-duty rear springs. Fuel economy estimates for the CNG version averaged 16 mpGGE.

## **Results**

The dedicated CNG-powered police pursuit vehicle was successfully demonstrated to five police departments and at least nineteen police officers within the jurisdictional boundaries of the SCAQMD over a two-year and two-month period. The vehicle accumulated approximately 6,000 miles. Survey scoring ranged from 1 (poor) to 5 (excellent) for overall satisfaction, drivability and performance, fuel economy, and recommending the vehicle. The vehicle scored an overall 2.6 and a 2.95 for drivability and performance. Comments included lack of trunk space, frequency of refueling, lack of power relative to the gasoline version, stalling and rear suspension issues.

The City of Monterey Park cited the need for more fuel capacity, and that the rear of the vehicle was “bottoming-out” on driveways. In response to fueling needs, an additional 2.7 GGE CNG tank was installed by A-1 (not Clean Fuels funded). Following similar rear suspension comments from the City of Sierra Madre, the vehicle was retrofitted with heavy-duty rear coil springs by Wondries. The vehicle was subsequently tested again by the sergeant at Monterey Park along with the project officer. The sergeant subjected the vehicle to: acceleration tests, braking tests, high speed right-angle and slalom turns, various grade transitions both up-hill and down-hill and at various speeds, and transmission changes from drive to stop to reverse, to test for engine stalling.

The acceleration test occurred on a stretch of public road and the vehicle achieved 95 mph. The officer noted that the vehicle still lacked acceleration above 70 mph compared to the gasoline FCV and attributed that to less “high-end” torque than the gasoline-powered model. The sergeant noted that the vehicle’s braking from high speed was good and that the vehicle’s handling had improved

significantly from the prior demonstration and performed notably well in executing all turns.

The vehicle was subjected to various grade transitions at various speeds, including a slow speed grade transition on an upward exit ramp from an underground parking garage (the officer recalled this same grade transition caused the vehicle to bottom-out during the preliminary demonstration). The vehicle was also driven at higher speeds (25-30 mph) through grade transitions from flat (0% grade) to an immediate upward pitch of 10% -15% grade. The Sgt. was unable to cause the vehicle to “bottom-out” at any time during the test drive. The vehicle was subjected to various grade transitions at extreme speeds, but presumably indicative of what is required of police pursuit vehicles operating under real-world conditions. The officer also subjected the vehicle to numerous “reverse-tests” to see if the vehicle stalled when the transmission was changed from drive to reverse (after bringing the vehicle to a complete stop). At no time during the “reverse-tests” did the engine stall.

## **Benefits**

Relative to its gasoline-powered counterpart, the CNG version of this vehicle is more than four times cleaner in hydrocarbon + NOx emissions and use of CNG helps to displace the use of petroleum based fuels. Costs of CNG relative to gasoline are available. The full benefits of this program are yet to be determined.

## **Project Costs**

Funding for this project was \$65,000; actual costs will slightly under this amount. Costs included a two-year vehicle lease, the conversion from gasoline to dedicated CNG, the up-fits from a base model to a fully deployable police vehicle, e.g. lights and sirens, push bar, radio, etc., vehicle maintenance, vehicle refueling (if unavailable), and vehicle demonstration.

## **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.

# Optimize & Demonstrate Selective Catalytic Regenerating Technology (SCRT) for NO<sub>x</sub> & PM Emissions Control

**Contractor**  
Johnson Matthey, Inc.

**Cosponsors**  
U.S. EPA  
SCAQMD

**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<sub>x</sub> 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 possible with a retrofit 4-way emission control technology on sixty-nine (69) heavy-duty diesel trucks operating in the South Coast Air Basin. Since SCR based NO<sub>x</sub> reduction is affected 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 be 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% NO<sub>2</sub> requirement for 1998-2002 MY heavy duty diesel engines. The SCRT system uses NH<sub>3</sub>, carried on

the vehicle as urea, to reduce NO<sub>x</sub> over a vanadium based SCR catalyst. The precise air assisted injection of urea is performed using an OE dosing pump controlled by an ECU developed by JM.

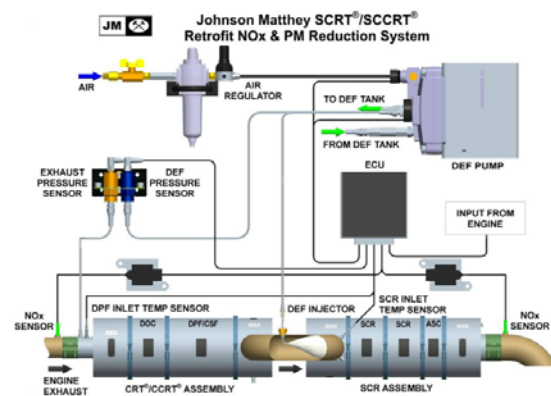


Figure 1: System Schematic

## Status

The phases of this project were:

- 38 systems were installed and operated on trucks within five fleets. The trucks were equipped with Detroit Diesel Series 60, Cummins ISM, Mercedes-Benz OM460LA, and Navistar DT466E/HT engines built between 1998 and 2002.



Figure 2: SCRT Typical System Installation

- Data monitoring on select trucks.
- Chassis Dyno Emissions Testing that was originally part of the program was not performed.
- CARB Verification  
A CARB test plan was completed and



submitted on September 15, 2010 in reference to a passive diesel particulate filter plus urea-based SCR. There was an SCR catalyst formulation change that occurred during the program. All program field installations were vanadium SCR.

## Results

Emissions data was gathered using NOx sensors to compare system out and engine out NOx levels during actual operation. The daily operational NOx reduction was as high as 78% as seen below.

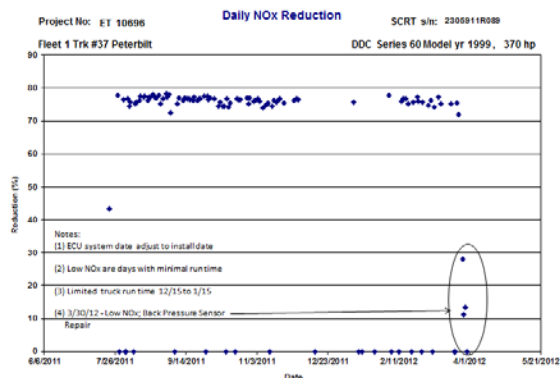


Figure 3: Daily NOx Reduction Graph - 569 Hours of Operation

Other information generated by the project included:

- Verification that 70% NOx reduction can be achieved with a CRT inlet temperature over 240°C for 40% of the operating time.
- Some earlier model year engines did not meet requirements for J1939 CAN Network availability.
- Wire splices in the electrical harness had failure issues during installation where harness routing had aggressive bend radius during installation.
- A universal Class 8 system bracket design was integrated on all of the participating vehicles.

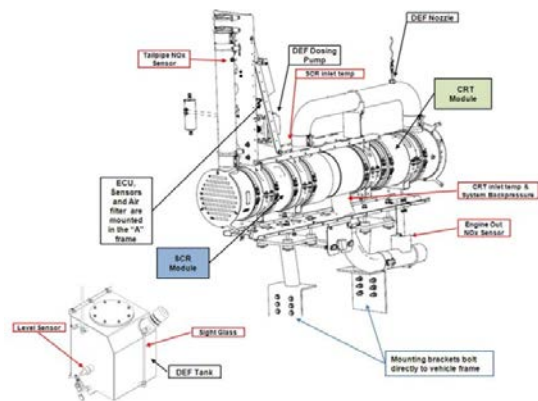


Figure 4: Vehicle Integration Application Schematic

- 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 downtime.
- Calibration of DEF level sensor at installation was not always accomplished requiring some post installation service downtime.
- The installation location and orientation of the tailpipe NOx sensor was demonstrated as un-reliable in some installations.

## Benefits

Besides the percentage of NOx reduction shown, the data gathered during this program was able to show that some applications could remove as much as 4.1 lbs. of NOx per daily average.

## Project Costs

The contract executed for this program was in the amount of \$2,300,000. The U.S. EPA provided funding in the amount of \$2,000,000 and SCAQMD provided \$300,000. The program was subsequently reduced in scope from 69 to 38 retrofits and chassis dynamometer testing was not performed. Consequently, final program costs totaled \$1,561,181; thereby, de-obligating \$738,819 from the contract.

## Commercialization and Applications

This demonstration program identified areas in the system that needed improvement like the wiring harness, DEF line connection methods, and tailpipe NOx sensor orientation to increase the system reliability. The universal class 8 bracket design system behind the vehicle cab integrated well with various over-the-road bulk delivery applications. The universal bracket design allowed for the system to be assembled with common parts with better volume purchasing potential.

## Optimize & Demonstrate Selective Catalytic Continuously Regenerating Technology (SCCRT) for NO<sub>x</sub> & PM Emissions Control

### Contractor

Johnson Matthey, Inc.

### Cosponsors

U.S. EPA  
SCAQMD

### 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<sub>x</sub> 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 possible with a retrofit 4-way emission control technology on sixty-nine (69) heavy-duty diesel trucks operating in the South Coast Air Basin. Since SCR based NO<sub>x</sub> reduction is affected 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 Catalyzed Continuously Regenerating Technology (CCRT®) filter with Urea based Selective Catalytic Reduction (SCR) to be retrofit on Heavy Duty Diesel vehicles. The SCCRT consists of several subsystems; DOC, CSF, SCR Catalyst module and urea dosing system. The CCRT filter technology was previously verified by CARB as a level 3 PM control device (>85% reduction) for 1994-2006

MY heavy duty diesel engines. The SCR system uses NH<sub>3</sub>, carried on the vehicle as urea, to reduce NO<sub>x</sub> over a non-vanadium based SCR catalyst. The precise air assisted injection of urea is performed using an OE dosing pump controlled by an ECU developed by JM.

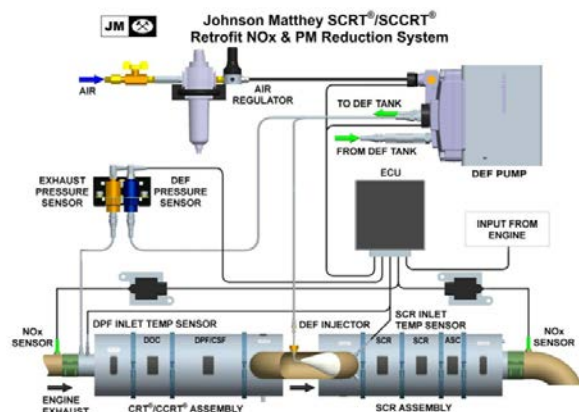


Figure 1: System Schematic

### Status

The phases of this project were:

- 69 systems were installed and operated on trucks within two (2) fleets. The trucks were equipped with Cummins ISX and Mercedes-Benz MBE4000 engines built between 2005 and 2006.



Figure 2: SCCRT Typical System Installation

- Data monitoring on select trucks.

- Chassis Dyno Emissions Testing that was originally part of the program was not performed.
- CARB Verification  
A CARB test plan was completed and submitted during the program on November 15, 2011 in reference to a passive diesel particulate filter plus urea-based SCR.

## Results

Emissions data was gathered using NO<sub>x</sub> sensors to compare system out and engine out NO<sub>x</sub> levels during actual operation. The daily operational NO<sub>x</sub> reduction was as high as 90% as seen below.

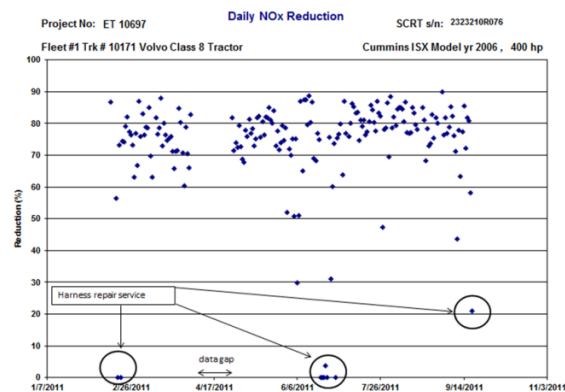


Figure 3: Daily NO<sub>x</sub> Reduction Graph – 1,260 Hours of Operation

Other information generated by the project included:

- Verification that 70% NO<sub>x</sub> reduction can be achieved with a CRT inlet temperature over 240°C for 40% of the operating time.
- Wire splices in the electrical harness had failure issues during installation where harness routing had aggressive bend radius during installation.
- A universal Class 8 system bracket design was integrated on all of the participating vehicles.

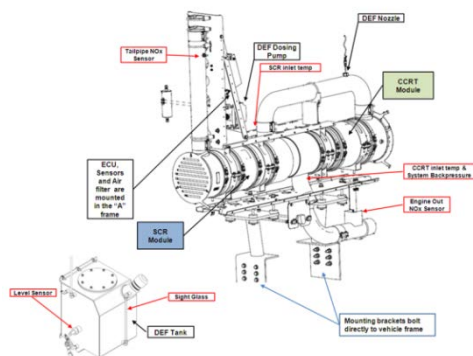


Figure 4: Vehicle Integration Application Schematic

- Operation on a long haul route on California Interstate I-15 targeting Baker Grade, Cajon Pass, and Mountain Pass experienced system backpressure warnings and alarms. These routes demanded sustained maximum engine loads during hauls up sustained grades, with ambient temperatures exceeding 110°F during the peak summer season, and high elevations.
- 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 downtime.
- Calibration of DEF level sensor at installation was not always accomplished requiring some post installation service downtime.
- The installation location and orientation of the tailpipe NO<sub>x</sub> sensor was demonstrated as un-reliable in some installations.
- Bracket system durability failures were observed on some trucks on one fleet.

## Benefits

Besides the percentage of NO<sub>x</sub> reduction shown, the data gathered during this program was able to show that some applications could remove as much as 8 lbs. of NO<sub>x</sub> per daily averages.

## Project Costs

The contract executed for this program was in the amount of \$2,300,000. The U.S. EPA provided funding in the amount of \$2,000,000 and SCAQMD provided \$300,000. Because the chassis dynamometer testing was not performed, the total program costs were \$2,223,500; thereby, de-obligating \$76,500 from the contract.

## 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<sub>x</sub> sensor orientation to increase the system reliability. The universal class 8 bracket design system behind the vehicle cab integrated well with various over-the-road applications for bulk goods delivery. Certain vehicle applications challenged the bracket system 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.



SCAQMD Contracts #12113, et al.

March 2014

## Retrofit 200 Heavy-Duty Diesel Trucks with DPFs

### Contractors

Southern Counties Terminals dba Griley Air Freight  
 South Bound Express, Inc.  
 National Ready Mixed Concrete, Co.  
 Standard Concrete Products, Inc.  
 Challenge Dairy Products, Inc.  
 Bear Trucking, Inc.  
 RRM Properties, Inc.  
 Gaio Trucking, Inc.  
 Spragues Ready Mix  
 Pipeline Carriers, Inc.

### Cosponsor

SCAQMD

### Project Officer

Mei Wang

DPFs are diesel emission control strategy (DECS) that traps particulate matter and other pollutants from diesel exhaust before entering the atmosphere. The captured materials are then combusted using the diesel engine's exhaust temperature or an external source of heat such as a diesel burner or electric heater.

### Status

The retrofit devices were successfully installed on all the trucks under this project before December 2011. The retrofitted trucks have been operating without issues.



DPF on an RRM Properties Truck

### Background

Diesel pollution from current goods movement operations greatly impacts the health of community resident near ports, rail yards, distribution centers, and roads with high truck traffic. In the Los Angeles/Inland Empire region, which includes California's largest concentration of goods movement facilities, the result has been major health risks associated with very high regional levels of ozone and particulate pollution. This project provides grants to heavy-duty diesel truck owners/operators on a competitive basis to upgrade their equipment to cleaner technologies.

### Project Objective

The objective of this project was to provide funding to heavy-duty diesel truck owners/operators to retrofit their trucks with diesel particulate filters (DPFs) and reduce their particulate matter (PM) emissions in a cost-effective and expeditious manner.

### Technology Description

Retrofit technology modifies the diesel exhaust system by replacing the existing muffler with an emission control diesel retrofit device that removes (PM) and other pollutants from the diesel exhaust stream and traps them inside the device.

### Results

This project provided direct PM emission reductions as listed in the table on the next page. Table 1 also provides individual contract numbers.

**Table 1: PM Emission Reductions by Contract**

Contractor	PM Emission Reduction (lb)/Project Life (2 Years)
Southern Counties Terminals dba Griley Air Freight Contract #12113	134.5
South Bound Express, Inc. Contract #12114	181.8
National Ready Mixed Concrete, Co. Contract #12118	913.8
Standard Concrete Products, Inc. Contract #12120	2563.2
Challenge Dairy Products, Inc. Contract #12121	62.5
Bear Trucking, Inc. Contract #12122	179.8
RRM Properties Ltd. Contracts #12123 & #12175	16535.6
Gaio Trucking, Inc. Contract #12124	2346.1
Spragues Ready Mix Contract #12125	103.4
Pipeline Carriers Inc. Contract #12186	1841.4

**Benefits**

The implementation of the project provides direct and cost-effective PM emission reductions. The retrofitted trucks are likely to operate many more years in the South Coast Air Basin even after the contract ends.

**Project Costs**

The SCAQMD’s total contribution from the Clean Fuels Fund was \$1,035,000. Project participants contributed the remaining costs. Project costs are broken down as follows.

**Table 2: Total Project Costs by Contractor**

Contractor	No. of Trucks	Total Cost of Devices	Total Cost of Installation	Total Project Cost
Southern Counties Terminals dba Griley Air Freight	9	\$30,392	\$6,585	\$39,750
South Bound Express, Inc.	3	\$33,018	\$4,274	\$37,292
National Ready Mixed Concrete, Co.	13	\$154,960	\$39,975	\$168,285
Standard Concrete Products, Inc.	15	\$176,930	\$25,450	\$218,235
Challenge Dairy Products, Inc.	3	\$26,475	\$6,000	\$34,394
Bear Trucking, Inc.	1	\$11,255	\$3,041	\$14,296
RRM Properties Ltd.	134	\$991,248	\$327,000	\$1,695,551
Gaio Trucking, Inc.	8	\$69,156	\$12,299	\$81,455
Spragues Ready Mix	4	\$26,407	\$6,703	\$30,704
Pipeline Carriers Incorporated	10	\$122,500	\$18,000	\$149,994
<b>Total</b>	<b>200</b>	<b>\$1,642,341</b>	<b>\$449,327</b>	<b>\$2,469,956</b>

**Commercialization and Applications**

The DPFs used for this project are fully commercialized CARB-verified Level 3 Plus devices that reduce PM by at least 85%. The DPFs are installed on many on-road heavy-duty diesel trucks to reduce PM emissions.

## Demonstrate DPF Technology on Two School Buses

### Contractor

Chaffey Joint Union High School District

### Cosponsors

SCAQMD

### Project Officer

Richard Carlson

### Background

Chaffey Joint Union High School District (Chaffey) operates a large fleet of school buses. Sixteen buses equipped with diesel engines using hydraulic electronic unit injectors (HEUI) had previously been retrofitted with Cleaire Horizon diesel particulate filters (DPFs) under the Lower Emission School Bus Program. However, immediately following the installation of the Horizon DPFs, the buses began to experience higher rates of injector failures, oil leaks, turbo failures, power loss, and other engine-related problems on these buses than previously experienced. These engine problems were attributed to high backpressure caused by plugged Horizon DPFs.

Chaffey presented their concerns about the apparent problems created by the Horizon DPFs to the SCAQMD and California Air Resources Board (CARB). As a result, a cooperative study was undertaken to review Chaffey's bus utilization and duty cycles, engine conditions, and maintenance practices. As a result of this, it was agreed that Chaffey could evaluate alternate DPF technologies to determine if the performance and maintenance problems were due to the Horizon design.

On March 1, 2013, the SCAQMD Board awarded a contract to Chaffey to purchase, demonstrate, and evaluate two retrofit DPF technologies in the amount of \$30,000.

### Project Objective

The objective of this project was to evaluate two alternate DPF technologies to the Horizon and

determine if one was better suited to the Chaffey buses and would provide better bus operation and less maintenance expense.

### Technology Description

The Horizon technology consisted of a manually operated, externally powered electric heater coil in front of a DPF substrate. When the bus was in operation, the DPF collected exhaust particulate. When the bus was parked, and when indicated by a warning lamp that regeneration was required, the operator/mechanic plugged in the heater system. The heater operated for a fixed time to raise the temperature of the DPF enough to burn off the collected soot.

Two alternate technologies were chosen for this demonstration: 1) the ESW *Thermacat* actively regenerated DPF and 2) the Donaldson *LNF* passively regenerated DPF. The ESW DPF uses diesel fuel injected in front of a catalyzed wall-flow DPF while the bus is in normal operation. The fuel injection start, rate, and duration is automatically controlled by the Thermacat control module without operator involvement whenever the exhaust backpressure builds up to a set value. The LNF continuously regenerates by reacting NO<sub>2</sub> in the exhaust gas with the collected particulate. The LNF consists of a flow-through catalyzed DPF followed by a conventional non-catalyzed wall flow DPF. The catalyzed section reacts NO in the exhaust to NO<sub>2</sub>. The system provides high collection efficiency along with continuous regeneration at low exhaust temperatures.

These two technologies were selected because they were the only ones approved by the California Highway Patrol for use on the school buses operated by Chaffey. The Thermacat was more expensive than the LNF but was expected to provide more consistent and reliable operation compared to the Horizon and LNF due to the automatic regeneration feature during normal driving. The LNF was attractive due to its simplicity and lower cost, provided its performance was acceptable. The two DPFs are shown in the photographs below.



Figure 1: ESW Thermacat installed on Bus 62



Figure 2: Donaldson LNF installed on Bus 55

### Status

Two buses previously equipped with Horizon DPFs which had experienced repeated incidents of severe power loss were selected for the demonstrations. Both had new engines installed in 2011. The Horizon DPFs were removed and the engines checked. Both engines were found to be in good condition without excessive oil or fuel consumption leaks and fuel injectors operating within specification. Exhaust temperatures were recorded using data loggers.

The buses were both 60 passenger Type D school buses with 7.2-liter Caterpillar 3126 engines. The engine uses hydraulically actuated electronic unit injectors (HEUIs). Bus 62 has the ESW Thermacat DPF. Bus 55 has the Donaldson LNF DPF.

As of December 18, 2013, both buses had operated for approximately three months and accumulated 8,616 miles on the Thermacat and 6,538 miles on the LNF. Regular maintenance was performed on the buses and monthly

inspections of the engines and checks of fuel for contamination with oil or water were performed. No oil was added to either engine during this period. The buses remained in operation continuing the demonstration through the end of the school year.

### Results

Both buses operated satisfactorily without any performance losses or engine mechanical issues (turbocharger or injector failures). With the Horizon DPF, problems would have already occurred on these buses during these time and mileage periods.

Chaffey recommends that all Horizon units be replaced with Thermacat DPFs and is requesting additional funding for their replacement from SCAQMD.

### Benefits

The study demonstrated that both alternate DPF technologies operated satisfactorily without the performance, operational, and maintenance issues experienced with the Horizon DPF. The study demonstrated that not all DPFs are appropriate for any particular engine design or and vehicle duty cycle.

### Project Costs

DPF Costs	
ESW Thermacat	- \$20,300
Donaldson LNF	- <u>\$17,822</u>
Total Cost	- \$38,122

Funding Source	
SCAQMD	- \$30,000
Chaffey JUHSD	- \$ 8,122

### Commercialization and Applications

Both ESW Thermacat and Donaldson LNF DPF technologies are currently in production, verified, and commercially available. .

SCAQMD Contract #11614

September 2014

## Demonstrate Battery-Electric Heavy-Duty Trucks

### Contractors

Transportation Power, Inc. (“TransPower”)  
EPC Power Corp.

### Cosponsors

CEC  
SCAQMD  
U.S. EPA

### Project Officer

Joseph Impullitti

### Background

In August 2010, SCAQMD applied for a \$400,000 award from U.S. EPA Region 9’s Clean Air Technology Initiative (CATI) Program. SCAQMD was awarded \$300,000 to demonstrate battery electric heavy-duty trucks traveling from the Ports to intermodal facilities, enabling the SCAQMD to fund an unsolicited proposal that had been submitted by TransPower, which offered to leverage California Energy Commission funds and create an expanded electric truck demonstration program involving two vehicles.

### Project Objective

TransPower was tasked to develop and demonstrate two heavy-duty battery electric Class 8 trucks as well as develop the manufacturing capability for the electric drive system in California. The project had two overarching objectives: to demonstrate a superior electric drive technology for heavy-duty trucks and to use this demonstration project as a springboard for rapid commercialization of a modular electric drive system.

### Technology Description

A zero-emission battery-electric drive system was to be installed by TransPower into two Class 8 truck tractors. Each drive system was intended to utilize a network control architecture to control modular components, including high-power drive motors and inverters along with electrically-driven

accessories, powered by lithium battery packs. A key technology advancement enabled by this project was development of a new onboard inverter-charger unit (ICU), which combines the functions of a motor inverter and battery charger. Other key advances included application of a new automated manual transmission and advanced battery management technologies to Class 8 electric trucks.

### Status

The ElecTruck period of performance began on July 8, 2011, and was originally scheduled to end after 28 months (November 8, 2013), but was extended to September 30, 2014, to allow more time for manufacturing and testing the second truck built under the project, the “Pilot Truck.” The Pilot Truck (shown here) was successfully operated under real-world conditions for nearly a full year and is now being upgraded to utilize more advanced components whose designs were enabled by the many lessons learned during the ElecTruck project. By the end of 2015, at least 20 medium- and heavy-duty electric vehicles will be in operation in California demonstration projects, using technologies and components developed or first demonstrated in Class 8 trucks during the ElecTruck project.



Figure 1: Pilot Truck

### Results

The ElecTruck project was highly successful in its core long term objectives of achieving major technology advances in two key areas: (1) vehicle control and integration and (2) advanced energy storage. More generally, the ElecTruck project



successfully advanced the state of the art in application of electric propulsion technology to Class 8 trucks, and provided valuable lessons learned that enabled TransPower to proceed to even more advanced component and integrated subsystem designs, which – as indicated above – are being incorporated into a growing fleet of fully operational electric Class 8 trucks, tractors, and school buses.

**Benefits**

The ElecTruck project demonstrated the essential feasibility of eliminating emissions from the largest and most polluting road vehicles, Class 8 trucks. If 5,000 electric trucks of the ElecTruck design were deployed in California by 2020, this would achieve an estimated aggregate emissions reduction of 378,500 tons of carbon per year – a significant step toward achieving the ARB 2020 limit of 427 million tons. Electric trucks of this design also eliminate criteria pollutants at the point of operation and reduce noise.

The project also resulted in valuable lessons learned that will result in future reductions in the costs of manufacturing electric trucks. For example, it was learned that manufacturing costs could be reduced by consolidating power components into a single structure before installing them onto the truck. This resulted in development of a new integrated “Power Control and Accessory Subsystem,” pictured here, which is now being incorporated into all future trucks.

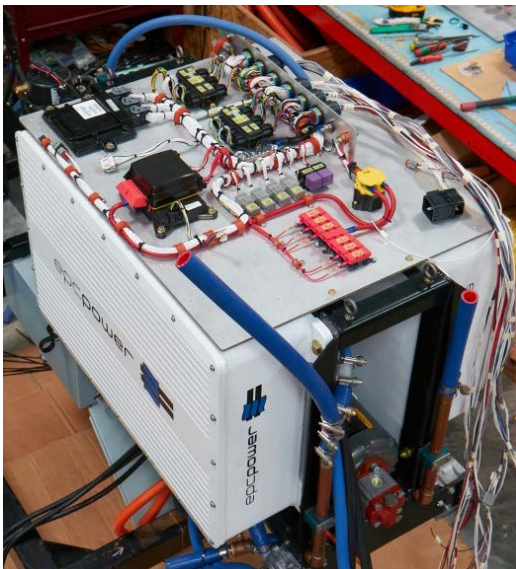


Figure 2: Power Control & Accessory Subsystem

**Project Costs**

The total cost of the ElecTruck project was approximately \$2,693,939. The SCAQMD contribution to this total was \$496,500, including the \$300,000 pass-through funding from U.S. EPA.

Partner	Contribution
SCAQMD/Clean Fuels Fund	\$196,505
U.S. EPA	\$300,000
CEC	\$1,000,000
TransPower	\$1,197,434
Total Project Costs	\$2,693,939

Total project costs were in line with initial expectations; the project was initially scoped as a \$2 million project that would involve manufacturing of one truck and was expanded to a two-truck project with a total budget of \$2.6 million when the SCAQMD funds were committed. The recurring cost of each truck manufactured with ElecTruck components is presently estimated to be less than \$500,000, and in volume this cost is expected to decline to \$300,000 to \$400,000.

**Commercialization and Applications**

Technologies and components developed or demonstrated on the ElecTruck project are also being applied to other heavy-duty vehicles, including electric off-road yard tractors and electric school buses. In addition, the ElecTruck project has led to funded efforts to develop a zero-emission range extender for heavy-duty electric trucks, using a hydrogen fuel cell to recharge batteries. These expanded applications and variants of the system demonstrated during the ElecTruck project have the potential to greatly expand the range of commercial applications to which these technologies can be applied.

## Upgrade & Install Electric Charging Infrastructure

### Contractor

Chargepoint (formerly Coulomb Technologies)

### 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 Chargepoint to install new or upgraded Level 2 EVSE at high usage site locations identified by SCAQMD and Chargepoint. Chargepoint 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 Chargepoint to leverage DOE and CEC support for installation of Level 2 EVSE as part of Chargepoint America, a DOE/ARRA project for installation of EVSE in key markets. Chargepoint upgraded existing EVSE which were obsolete and installed new EVSE. Chargepoint submitted a list of approved sites. As part of the SCAQMD program, Chargepoint dedicated full time resources to identify potential site hosts eligible for replacement of obsolete units.

Chargepoint completed installation of 8 of the planned 70 EVSE. Some costs were in excess of

\$1,000, with those costs supplemented by Chargepoint America funding and/or the site hosts. Using the approved site list for sites with obsolete equipment proved challenging. For a three month period, Chargepoint dedicated staff to contact site hosts and owners of obsolete EVSE to assess replacement opportunities. From October 2012 to April 2014, 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 EVSE 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, Chargepoint approached SCAQMD to request approval of funds to contribute to new sites. By agreement, Chargepoint followed the same procedures for submission to SCAQMD and provided site locations for approval or denial. Some prominent locations included workplaces and major destinations including Cedars Sinai Hospital, Disneyland/Downtown Disney, and Burbank Water and Power. All sites are public access.

### Technology Description

Level 2 EVSE with J1772 connectors were installed. EVSE were either pedestal mounted or wall mounted depending on the site configuration. 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 EVSE.

## Status

Chargepoint changed its name from Coulomb Technologies in late 2012. Due to various unforeseen delays, Chargepoint was unable to complete all 70 Level 2 EVSE installations under the original term. In the meantime, fellow EVSE entity ECOTALITY declared bankruptcy and CarCharging Group assumed control of ECOTALITY's assets in late 2013. Clipper Creek was also unable to execute a contract to upgrade 70 Level 2 EVSE. Hence staff executed a new contract with Chargepoint to install 162 Level 2 EVSE in 2015 at workplaces and destinations.



Figure 1: Chargepoint EVSE

## Benefits

This project will assist in advancing PEV readiness in California by creating additional public charging that is convenient and affordable for PEV drivers.

## Project Costs

EV infrastructure hardware and installation costs were through DOE and CEC funding from Chargepoint America, and remaining installation costs were cost shared between Chargepoint America 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. Chargepoint America has installed about 20,000 chargers and 3,000 sites in North America, the world's largest charging network. About 25% of these sites are in California.

## Results

Chargepoint's Level 2 EVSE installations are shown in the following map:

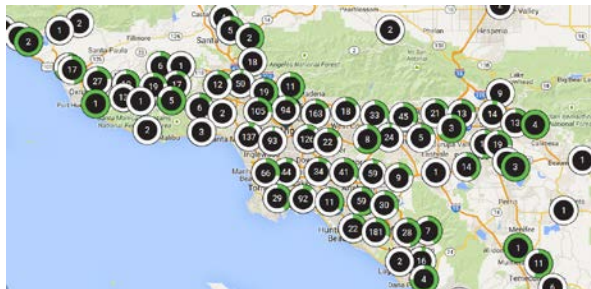


Figure 2: Chargepoint's Level 2 EVSE Installations

Source: <http://chargepoint.com>



SCAQMD Contract #13149

March 2014

## Develop Southern California PEV Readiness Plan

### Contractor

UCLA Luskin Center for Innovation (Luskin Center)

### Cosponsors

Southern California Association of Governments (SCAG), via award from the CEC  
SCAQMD, via award from the U.S. DOE

### Project Officer

Patricia Kwon

### Background

Every day, more and more plug-in electric vehicles (PEVs) can be spotted on the roads of Southern California. Volatile gasoline prices, state zero emission vehicles programs, federal fuel economy and vehicle emission standards, improved battery technology, and concerns over meeting federal ambient air quality standards and state climate change goals have created a growing market for PEVs.

### Project Objective

SCAQMD supported the Luskin Center in development of the *Southern California Plug-In Readiness Plan* and specifically six chapters of this report. These chapters focus on addressing the barriers and opportunities for both workplace and multi-unit dwelling (MUD) charging in Southern California.

### Technology Description

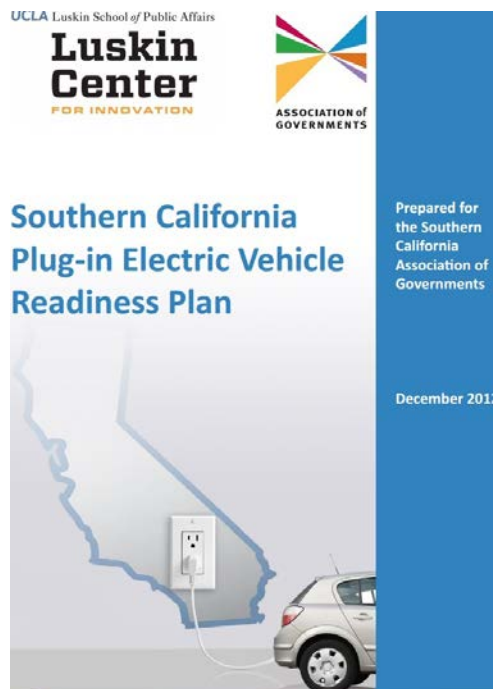
PEVs can lower greenhouse gas emissions, improve air quality, increase electric grid efficiency, and reduce fuel costs. PEV deployment, however, will depend in part on how effectively PEV infrastructure is planned. The Luskin Center's PEV Readiness Plan explored the ecosystem of PEV stakeholders whose actions shape the technology's viability and success. This includes various types of property owners (including in the residential and workforce setting) and different levels of government.

### Status

The Luskin Center submitted the [\*Southern California Plug-In Electric Vehicle Readiness Plan\*](#) in December of 2012.

### Results

With support from SCAQMD, the Luskin Center completed six chapters in the *Southern California PEV Readiness Plan* consisting of recommendations for stakeholders on the following:



1. Streamlining construction permitting and inspection processes;
2. Updating building codes;
3. Updating zoning and parking rules;
4. Making public charging station site selection (regional planning). This involved creating a methodology and a 3-5yr charging station site plan for deploying workplace and publicly available charging infrastructure; and
5. Creating and implementing a plan for effective marketing and outreach.

### **Benefits**

Since the release of the Southern California PEV Readiness Plan, municipalities and other stakeholders in the South Coast basin have been using the plan and adopting recommendations in it. The plan is helping stakeholders make efficient and effective decisions to support the deployment of clean vehicles that reduce air pollution in the region. The Luskin Center continues to promote the report supported by SCAG and the SCAQMD and educate regional stakeholders about its recommendations.

### **Project Costs**

The costs were estimated to be approximately \$35,000 based on staffing requirements for the six chapters. SCAQMD has agreed to contribute \$32,000. The Southern California Association of Governments contributed the majority of the funding for the project, at nearly \$200,000.

### **Commercialization and Applications**

The main deliverable is a public document.

SCAQMD Contract #15388

December 2014

## Participate in California Fuel Cell Partnership for CY 2014 & Provide Support for Regional Coordinator

### Contractor

Bevilacqua-Knight, Inc.

### Cosponsors

8 automakers; 5 government agencies; 1 technology provider; 9 associate members and 14 affiliate 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. (BK<sub>i</sub>) for their portion of CaFCP administration. SCAQMD joined the CaFCP in April 2000, and the CaFCP currently includes 37 organizations interested in demonstrating fuel cell vehicle and fueling infrastructure technology.

### Project Objectives

Several key goals for 2014:

- Provide education and outreach to support agencies to provide funding opportunities and to encourage transit agencies to become a Center of Excellence. Identify logical options for other heavy-duty fuel cell vehicles;
- Identify, explore and recommend action on issues that help or hinder deployment;
- Begin full implementation of national ER template into existing programs;
- Support station performance codes & standards and activities that improve station performance and development;
- Identify and address key barriers and prepare recommendations to improve timeline to 68 stations. Explore innovative methods of building demand;
- Provide education and training for emergency responders, permittees, and station builders,

including expanding future technician & other training programs;

- Identify and work with the stakeholders and members in early market communities to provide information and resources about fuel cells and hydrogen. Bring in targeted training at right time. Participate in ZEV Action Plan team with OPR and Go-BIZ;
- Conduct one-on-one briefings with California state and federal elected officials, their district and capitol staff and NGOs.
- Raise awareness about the availability and benefits of ZEVs and offer driving opportunities. Provide outreach and education through events, materials, video, web and social media that increase awareness, build support in early market communities and support other projects' specific goals.

### 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 #15388 for 2014 membership. This contract was completed on schedule.



**Congressman Mark Takano talks to SunLine Transit general manager Lauren Skiver during CaFCP-organized tour of four fuel cell electric buses under construction at Eldorado facility in Riverside. State Senator Richard Roth and ARB staff also attended.**

### 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, Toyota's FCHV-adv and VW/Audi's Golf Sportwagen HyMotion and A7 h-tron. The fuel cell transit buses include 12 placed at AC Transit (Van Hool buses with UTC fuel cells) and 4 placed at Sunline Transit (1 Ballard/New Flyer and 3 Ballard/BAE/EIDorado).

## Results

Specific accomplishments include:

- Automotive members placed over 500 fuel cell passenger vehicles on California roads from 1999 through 2014, including the first retail customers starting in 2005;
- Transit agency members have demonstrated 25 fuel cell buses since 1999, with 16 currently in operation (see technology description);
- There are eight public hydrogen fueling stations in operation in California. There are also 49 in development in 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, the Governor's Office of Business and Economic Development and the California Energy Commission, began briefing city staff across California state to optimize station permitting.
- CaFCP, GO-BIZ, CEC and others, hosted briefings and permitting workshops across the state for local government staff and elected officials.

## 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 (CO<sub>2</sub>).

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. SCAQMD's contribution for 2014 was \$137,800.

## 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.

SCAQMD Contract #04185

April 2014

## Develop & Demonstrate Hydrogen ICE Vehicles for Five Cities Program

### Contractor

Quantum Fuel Systems Technologies Worldwide, Inc.

### Cosponsor

SCAQMD

### Project Officer

Patricia Kwon

### Background

This program was part of a larger demonstration of hydrogen internal combustion vehicles (ICE) and infrastructure started in 2003. SCAQMD initiated an effort to establish a network of hydrogen fueling stations and several fleets consisting of vehicles equipped with hydrogen powered internal combustion engines. To date, the high cost and limited availability of fuel cell vehicles have been a limiting factor in the deployment of hydrogen infrastructure. It is anticipated that hybrid electric and conventional vehicles equipped with hydrogen fueled internal combustion engines will stimulate the demand for hydrogen, expedite the development of infrastructure and provide a bridge to fuel cell vehicles. Conventional and hybrid electric vehicles equipped with hydrogen powered internal combustion engines have the potential to eliminate VOC, CO and CO<sub>2</sub>, and significantly reduce NO<sub>x</sub> and air toxics.

### Project Objective

This program consisted of 30 model year 2004 Toyota Prius vehicles, located at five cities (Santa Monica, Burbank, Santa Ana, Riverside, and Ontario) and SCAQMD Headquarters, all within the South Coast Air Basin in Southern California. Each city was also awarded a hydrogen fueling station to provide fuel for the five hydrogen vehicles located within each particular city. The plan was that this initial hydrogen program consisting of stations and vehicles would spur additional hydrogen infrastructure to be established within the SCAQMD region.

### Technology Description

The engine development and calibration on the Prius was developed around the Quantum engine controller and Quantum experience using gaseous fueled engines. On this program there was not support from Toyota for the calibration of the engine control. This drove Quantum to use the Huntington engine controller and implement this as an add-on controller. The control strategy for the engine was to use a lean-burn approach to avoid a high level of NO<sub>x</sub> emissions that are typically associated with combustion engines.

Emission testing was performed periodically on all vehicles to ensure compliance with SULEV standards. This program was limited in scope with respect to On Board Diagnostics (OBD) due to the lack of OEM level support to tie directly into the engine ECU and modify the OBD algorithms, calibration and add enhancement for gaseous fuels. The vehicles have limited OBD features, as described below but are not fully OBD-II compliant. Quantum has done a significant amount of work to make the vehicle as compliant as possible with current OBD-II requirements.



Figure 1: 2008 Toyota Prius Converted to Operate on Hydrogen Fuel

### Status

Vehicles were converted and deployed between December 2005 and March 2006 and a CARB experimental permit was issued for five years. An extension of this experimental permit obtained two more years, and then a third extension of the

experimental permit was obtained for seven vehicles until April 2014. Four of SCAQMD's vehicles were transferred to DOE Sandia and Livermore Laboratories for demonstrating hydrogen storage technologies, and one vehicle was transferred to California State University Los Angeles for testing their upgraded hydrogen station. The remaining vehicles had hydrogen system components removed and were crushed according to the terms of the experimental permit.

**Results**

All of the emission testing for the program was conducted at the Quantum SULEV emissions lab. This is a laboratory grade test facility which is recognized by both CARB and U.S. EPA. The vehicle was run through all of the mandatory emissions tests to ensure compliance with the applicable SULEV standards. The vehicles were also tested on a regular basis in compliance with the CARB experimental permit.

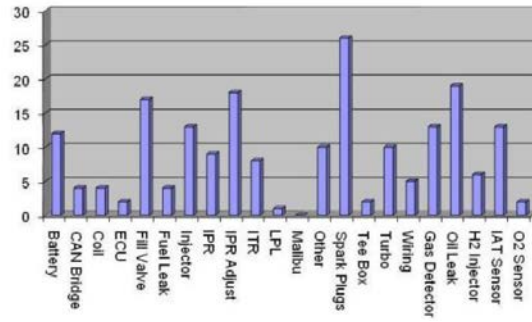
The fleet was polled in March 2012 for the current mileage of their vehicles. The table below shows the mileage of each fleet. Ontario and Santa Monica had previously reported their data to SCAQMD (8/2011 and 3/2010 respectively). The bottom row shows the average mileage for each cities hydrogen fleet. The vehicle mileages that are highlighted indicate vehicles that continued operation beyond March 2012.

**Table 1: Mileage by City**

AQMD (3/12)	Burbank (3/12)	Ontario (8/11)	Riverside (3/12)	Santa Ana (3/12)	Santa Monica (3/10)
6,083	7,748	8,097	8,080	5,136	7,789
9,765	23,916	5,448	11,154	7,772	5,211
8,794	10,993	5,941	7,886	5,392	13,699
6,712	8,480	7,709	15,015	5,143	4,349
10,519	6,563	5,405	--	6,900	6,468
8,375	11,540	6,520	10,534	6,069	7,503

Over the course of the five year service and maintenance program, Quantum performed numerous repairs on the fleet. Below is a summary of each repair performed on the fleet. Spark plugs were by far the most frequently serviced item, as they fouled due to water in the combustion chamber coming into contact with the spark plug tip (or electrode). Rust around the electrode would cause the spark plug to fail, and the vehicle would immediately begin running rough.

**Table 2: Common Types of Vehicle Repairs**



**Benefits**

The Five Cities program successfully demonstrated interim hydrogen fuel vehicle technology and infrastructure (electrolyzers and mobile fuelers), and was one of the largest scale combined vehicle and infrastructure deployments when the project was funded in 2004. It accelerated the development of a sustainable hydrogen market by demonstrating the feasibility of hydrogen as a vehicle fuel while directly reducing vehicle pollutants, greenhouse gas emissions, and petroleum usage. These vehicles displayed a Clean Fuel decal and were extensively used for public outreach events (e.g., public meetings, conferences, automobile shows, etc.), as well as education and training at local high schools and universities in order to expose the next generation of clean technologies.

**Project Costs**

Total cost was \$2.35 million for this vehicle project, all contributed by SCAQMD. The hydrogen station portion of this project, through a separate contract with Air Products and Chemicals, Inc., again fully funded by SCAQMD, was \$4.16 million (comprising construction, maintenance and closing costs).

**Commercialization and Applications**

Quantum recognized the challenges of developing a fully OBD-II compliant conversion on a commercially available vehicle, and suggested that future conversions also have the support of the vehicle OEM as part of the team that develops the conversion. Some support from the OEM can significantly reduce the conversion time, and complexity of the conversion, along with ensuring the final product is fully OBD-II compliant.



## Study Sources, Composition, Variability & Toxicological Characteristics of Ultrafine Particles in Southern California

### Contractor

University of Southern California

### Cosponsor

SCAQMD

### Project Officer

Jean Ospital

### Background

Many of the health effects associated with exposure to particulate matter (PM) derive from the ability of PM to generate oxidative stress. Ultrafine particles (UFP) ( $d_p < 0.1\text{--}0.2\ \mu\text{m}$ ), in particular, may be more toxic than coarse or fine PM. Despite their very low contribution to PM mass, UFP dominate particle number concentrations as well as have a large surface area relative to fine or coarse particles and a high pulmonary deposition efficiency. These particles can thus carry considerable amounts of toxic air pollutants, such as organic carbon and transition metals.

### Project Objective

24-hour time-integrated samples were concurrently collected once a week for a year-long period at 10 distinctly different areas across the Los Angeles Basin, followed by comprehensive chemical and toxicological analyses, to provide insight on the seasonal and spatial variability in the chemical composition, sources and oxidative potential of quasi-UFP ( $\text{PM}_{0.25}$ ,  $d_p < 0.25\ \mu\text{m}$ )

### Method Description

Sites included source, near-freeway, semi-rural receptor and desert locations. They can be classified according to their geographical location into Long Beach (HUD), western LA (GRD, LDS), central LA (CCL, USC), eastern LA (HMS, FRE), Riverside County (VBR, GRA) and Lancaster (LAN); in respective order of their increasing distance from the coast. Sources

contributing to total and elemental mass of quasi-UFP were determined using a molecular marker-based chemical mass balance (MM-CMB) model and principal component analysis (PCA), respectively. Redox activity of the PM samples was measured using both chemical (dithiothreitol (DTT) assay) and cell-based macrophage (reactive oxygen species (ROS) assay) assays. The association of oxidative potential with chemical species and sources was evaluated using univariate and multivariate regression analyses. Furthermore, ROS-activity levels of quasi-UFP in Los Angeles were compared across different seasons, worldwide urban locations and particle-size fractions. The impact of atmospheric aging on quasi-UFP PM oxidative potential was also investigated.

### Status

This project is completed and a list of relevant publications are attached to this report. A few additional field experiments were run with the aim of evaluating the effect of atmospheric aging on the oxidative potential of ultrafine particles, which are a very minor and mostly confirmatory part of the study, and are expected to be completed by the Spring of 2015.

### Results

Average  $\text{PM}_{0.25}$  mass concentration ranged from 5.9 to 16.1  $\mu\text{g}/\text{m}^3$  across the basin and seasons. Wintertime levels were highest at the source HUD site, while lowest at the desert-like LAN site. On the other hand, summertime concentrations peaked at the inland receptor locations. Chemical mass closure showed that that quasi-UFP in the basin consisted of 49–64% organic matter, 3–6.4% elemental carbon (EC), 9–15% secondary ions (SI), 0.7–1.3% trace ions, and 5.7–17% crustal material and trace elements, on a yearly average basis.

Among all measured organic compounds, n-alkanes, which were predominantly of anthropogenic source (carbon preference index (CPI)  $\sim 1$ ), were the most abundant species in

PM<sub>0.25</sub> with cumulative levels ranging from 9.34 to 48.08 ng m<sup>-3</sup> over all sites and seasons. Seasonal averages of total polycyclic aromatic hydrocarbons (PAHs), hopanes and steranes, molecular markers of vehicular emissions, were highest in winter while lowest in summer. Primary sources, which were determined using the MM-CMB model, included mobile sources (combined gasoline and diesel vehicles), wood smoke, natural gas combustion, vegetative detritus, and ship emissions. To characterize sources of trace elements and metals, PCA was applied to site-pooled elemental data as well as urban and rural receptor site clusters. Five major sources were identified, including road dust (influenced by vehicular emissions as well as re-suspended soil), vehicular abrasion, residual oil combustion, cadmium sources and metal plating. These sources collectively accounted for about 85% of the total variance of quasi-UFP elemental content.

The redox activity of PM<sub>0.25</sub> samples was also assessed by means of a biological ROS assay (generation of ROS in rat alveolar macrophage cells). Seasonally, fall and summer displayed higher volume-based ROS-activity (i.e. ROS-activity per unit volume of air) compared to spring and winter. ROS levels were generally higher at near source and urban background sites compared to rural receptor locations, except for summer when comparable ROS-activity was observed at the rural receptor sites.

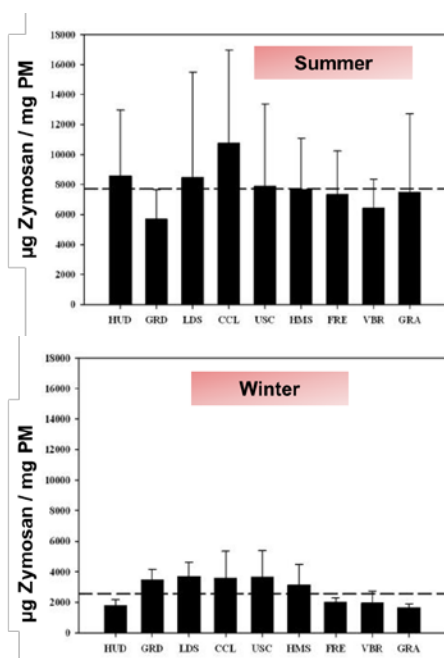
A multivariate regression method was also used to obtain a model for predicting the ROS-activity of PM<sub>0.25</sub>, based on its water-soluble components. The most important species associated with ROS were Cu and La at the source site of Long Beach, and Fe and V at urban LA sites. These metals are tracers of road dust enriched with vehicular emissions (Fe and Cu) and residual oil combustion (V and La). At Riverside, a rural receptor location, WSOC and Ni (tracers of SOA formation and metal plating, respectively) were the dominant species driving the ROS-activity. To further investigate the potential role of water-soluble and water-insoluble portions of ambient PM in the potential toxicity of PM, size-fractionated ambient particle samples (coarse, fine and ultrafine PM) were collected in August-September of 2012 at the urban USC site, using the Versatile Aerosol Concentration Enrichment System (VACES)/BioSampler tandem system. While water-soluble species contribute to the large majority of the ROS-activity per volume of sampled air, high intrinsic ROS-activity (i.e. PM mass-normalized) is observed for the water-insoluble portions. Organic compounds in both water-soluble and water-insoluble portions of ambient PM, as well as transition metals, several with recognized redox activity (Mn, V, Cu and Zn), are highly correlated with ROS-activity.

### Benefits

Findings help establish the association between sources, composition and toxicity of UFP and provide a strong scientific basis for developing more targeted and cost-effective regulatory strategies at both the federal and state level. Moreover, the extensive database on UFP generated from this project constitutes an invaluable resource to PM exposure and health studies in the L.A. Basin.

### Project Costs

Total estimated project cost was \$470,969, including \$300,000 in U.S. EPA funding through a pass-through contract. Final cost of the project is pending final invoice and financial close out by the USC Office of Sponsored Projects.





# Health Effects of PM Emissions from Heavy-Duty Vehicles – A Comparison Between Different Biodiesel Fuels

## Contractor

University of California Riverside

## Cosponsor

SCAQMD

## Project Officer

Brian Choe

## Background

Governmental agencies around the world have been implementing legislation that targets growing the use of renewable fuels in the transportation sector. In the U.S., the Energy Independence and Security Act of 2007 mandate the use of 36 billion gallons of biofuels in the transportation fuel pool by 2022. In California, the low carbon fuel standard (LCFS) was implemented in 2011 to promote the reduction of greenhouse gas emissions by targeting a reduction in the carbon intensity of transportation fuels by 10% by 2020. In addition, the implementation of more stringent standards for heavy-duty vehicles is a key strategy for the improvement of air quality in the SCAQMD. These facts, coupled with the continuously growing concern over global warming and environmental degradation, have accentuated public and scientific awareness and led to a substantial effort to develop alternative fuel sources including biofuels and to improve engine technologies.

## Project Objective

The main goal of this study was to investigate the physical and chemical properties as well as toxicological characteristics of PM emissions from heavy-duty vehicles operating on various types of biodiesel blends to evaluate the air quality impacts and associated health risks from the use of biodiesel as a transportation fuel.

## Technology Description

Experiments were conducted with two heavy-duty diesel vehicles: a MY 2002 truck without any emission control technologies and a MY 2010 truck fitted with a diesel oxidation catalyst (DOC) followed by a diesel particle filter (DPF) and selective catalytic reduction (SCR) to comply with current U.S. EPA emissions standards. The biodiesels tested include a soy-based methyl ester (SME), a waste cooking oil methyl ester (WCO), and a methyl ester obtained from animal fat (AFME). The biodiesels were blended at a 50% proportion by volume with the CARB ULSD. The vehicles were tested on a heavy-duty chassis dynamometer at the UCR facility over the EPA UDDS test cycle to measure: 1) regulated emissions; 2) unregulated emissions such as ammonia, carbonyl compounds, and volatile organic compounds; 3) the physical properties of PM emissions (e.g., PM mass, number, and size distributions); 4) the chemical properties of PM emissions (e.g., PAHs, WSOC, inorganic ions, organic compounds, and metals); and 5) the toxicological characteristics of PM emissions (e.g., redox activity, electrophilic properties, and pro-inflammatory properties).

## Status

This project was completed in March of 2014. The results have been presented at several conferences and in an SAE technical paper with two additional peer review journal articles being prepared for publication.

## Results

THC, NMHC, CO, and PM mass emissions showed reductions with the use of biodiesel blends for the uncontrolled 2002 truck. These phenomena can be explained by the higher oxygen content in the methyl ester moiety which helps reduce rich combustion zones and promote more complete combustion and reduce the sooting tendency of biodiesel. For the heavily controlled 2010 truck, THC, NMHC, CO, and PM emissions

were very low due to the DOC/DPF system, and did not show any strong fuel effects.

Overall, NO<sub>x</sub> emissions exhibited increases with the use of biodiesel for both vehicles, with the differences in NO<sub>x</sub> emissions relative to CARB ULSD being statistically significant for the 2010 truck. In addition, NO<sub>x</sub> emissions showed some feedstock dependency with the unsaturated SME-50 producing higher NO<sub>x</sub> than the more saturated AFME-50 blend.

Particle number emissions did not show any strong fuel effects for the 2002 truck while they were below the tunnel background levels for the 2010 truck. As for particle distributions, CARB ULSD produced more accumulation mode particles compared to biodiesel blends while the more unsaturated SME-50 showed higher nucleation mode particle counts relative to CARB ULSD and other biodiesel blends.

Ammonia emissions were significantly higher for the SCR-fitted vehicle. This is likely due to the use of urea injection to suppress NO<sub>x</sub> emissions. Biodiesel blends also produced higher NH<sub>3</sub> emissions in comparison to the baseline CARB ULSD.

Overall, the use of biodiesel resulted in decrease of PAHs. For the 2002 truck, biodiesel blends reduced PAH emissions, although the absence of emission aftertreatment technologies led to greater levels of higher molecular weight PAHs. For the heavily controlled 2010 truck, most PAH compounds were practically undetectable as a result of the DOC/DPF system although some light molecular-weight PAHs were detected.

The redox activity measured with the macrophage ROS assay did not show any strong fuel trends for either test vehicle whereas the oxidative potential, as measured with the DTT assay, showed some large reductions with the use of biodiesel blends relative to CARB ULSD for the 2002 truck. The DTT assay showed that biodiesel exhaust was less potent than CARB ULSD. This observation was supported by the vapor-phase PM results where the redox activity of biodiesel blends was lower than for CARB ULSD. For the 2010 truck, the DTT values for the particle-phase components were well below the filter blank levels due to the very low PM mass.

To assess the inflammatory response of diesel and biodiesel blends for both vehicles, the expression of cytokine tumor necrosis alpha (TNF- $\alpha$ ) by a mouse macrophage cell line (Raw 264.7) was

used. The PM samples from the 2002 truck were capable of increasing TNF- $\alpha$  while the PM samples from the 2010 truck exhibited very low activity. The vapor-phase samples, on the other hand, showed high negative values that we hypothesize are real and important effects, which could reflect suppression of the TNF- $\alpha$  response.

To assess the protective response of diesel and biodiesel blends for both vehicles, the cellular hemeoxygenase-1 (HO-1) expression was determined. The biodiesel particle-phase samples collected from the 2002 truck increased the expression of HO-1 at greater levels than those exhibited by the CARB ULSD. In contrast to the particle-phase PM samples, the vapor-phase samples collected showed greater expression of HO-1 for the CARB ULSD than the biodiesel blends.

The DTT redox activity of the emitted PM was found to correlate well with the WSOC, the redox-active transition metals, alkanes, hopanes and steranes. This indicates that these species are likely to be involved in the oxidation stress mechanism by the generation of ROS.

## **Benefits**

The information obtained from this program will be valuable in evaluating and mitigating any potential air quality impacts from the increased use of biodiesel. By understanding the impacts of alternative fuels on vehicle emissions, we can better ensure these fuels can be implemented in a way that preserves or improves air quality, while meeting goals for petroleum displacement and reductions in greenhouse gases.

## **Project Costs**

The project cost was \$207,500 funded by the SCAQMD.

## **Commercialization and Applications**

Currently, there is insufficient information to fully understand the air quality impacts of widespread implementation of biodiesel. This research will have important implications for the expanded use of biodiesel in commercial vehicles, and what impacts this might have on vehicle performance.

SCAQMD Contract #09304

December 2014

## Install & Evaluate Two 40kW (AC) PV Systems at SCAQMD Headquarters

### Contractor

Solar Integrated Technologies, Inc.

### Consponsor

SCAQMD

### Project Officer

Patricia Kwon

laminates use a thin stainless steel substrate that is produced through a proprietary continuous vapor deposition process. The BIPV panels weigh 12 ounces per square foot and are suitable for lightweight structures. BIPV is known for its ability to utilize a wider spectrum of light for increased power output during cloudy, low-light conditions. The BIPV system was installed at a zero degree tilt.

### Background

On October 3, 2008, the SCAQMD Board approved the execution of contracts to install two new photovoltaic (PV) systems at the SCAQMD facility in Diamond Bar, CA. One is a conventional multi-crystalline silicon PV system and the other is a building integrated PV (BIPV) system. The SCAQMD currently owns and operates two solar electric systems, including an 80 kW (AC) PV system on the main building and a 20 kW PV system on a carport in the parking lot.



Solar Roof Panels on SCAQMD Building

### Project Objectives

The objective of this project is to compare the performance of BIPV and crystalline silicon PV systems, as well as add solar capacity and generate additional clean, renewable electricity for the facility. The project involves a demonstration of two different PV technologies on the same roof above the conference center. SCAQMD will test the performance and reliability of the two systems under similar light conditions for a period of at least five years.

### Technology Description

The BIPV system combined a Sarnafil thermoplastic PVC roofing membrane and a Uni-Solar amorphous silicon PV laminate. The BIPV panels were welded together at Solar Integrated's (SIT's) manufacturing facility in Los Angeles. The roofing membrane has a class A fire rating, is resistant to water and bacterial growth, and energy efficient (listed under U.S. EPA's Energy Star program). The amorphous thin film silicon

### Status

This installation was completed and on June 17, 2009, the system was turned on, following approval for interconnection by Southern California Edison. Edison approved the payment of the first monthly performance based incentive (PBI) check on November 23, 2009. During and after installation, several problems arose.

Since there were two separate systems and one rebate, the project had to combine the single lines. It was solved by working with SIT's engineer and teamwork. SCAQMD's single line diagram was several years old and did not include four of its turbine engines. When the issue was uncovered, it was resolved by updating the single line for the entire building to include the two PV systems.

SIT was contracted to re-roof underneath the modules and ended up putting more modules down.

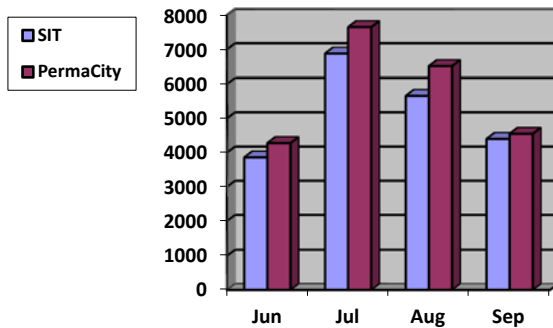
Edison mandated a \$1,041 new meter charge that was previously unknown. This problem is being solved by splitting the cost between PermaCity and SIT.

to mass production of solar modules making them an affordable, widely available commercial product.

Monitoring and the SCAQMD kiosk have been an ongoing challenge. Working together, SCAQMD, Fat Spaniel, and PermaCity now have the monitoring system and kiosk running. The kiosk shows the performance of the two new solar PV installations as well as the first 80 kW solar PV installation. Testing of the performance and reliability of the two systems continued under similar light conditions for five years after installation.

### Results

The BIPV system is projected to produce 77,672 kWh annually, with an estimated annual cost savings in electricity of \$11,000. Production data for both systems are below.



### Benefits

Estimated CO2 reductions for both solar PV installations are approximately 78 tons/year using the California GREET model. ([Environmental impacts of PV electricity generation - a critical comparison of energy supply options](#))

### Project Cost

The total project cost for the PV system installation was \$390,695. All funds were paid by the SCAQMD.

### Commercialization and Applications

Both crystalline and thin film solar modules are already commercial products. They have both demonstrated their efficacy and applications in the renewable energy generation field. The increased demand for renewable energy has led

SCAQMD Contract #13078

December 2014

## Steam Hydrogasification Process Demonstration

### Contractor

University of California Riverside

### Cosponsors

CEC  
SCAQMD

### Project Officer

Brian Choe

### Background

Utilization of renewable energy sources is an integral part of California's strategy to reduce greenhouse gas emissions and to diversify domestic energy sources. Renewable Natural Gas (RNG) can be produced from carbonaceous and renewable feedstocks through a number of technologies including anaerobic digestion, landfill gas collection, gasification and pyrolysis. However, these technologies are often inefficient and the product gas is typically of low quality and inferior to fossil source-based natural gas. The Steam Hydrogasification Reaction (SHR), which has been developed by UCR, is a thermochemical process that can produce high quality RNG from organic waste in a cost-effective and efficient manner. The SHR is also capable of handling wet feedstocks providing an attractive option to utilize solid waste with high moisture contents such as biosolids from wastewater sludge that pose more environmental challenges and issues in disposal.

### Project Objective

The objective of this project was to demonstrate the SHR system in a Process Development Unit (PDU) scale reactor to produce RNG from wet organic waste, namely biosolids comingled with food and green waste, to validate and refine the process and develop a preliminary engineering design for a pilot plant.

### Technology Description

SHR is a thermochemical process to produce high quality RNG from organic waste in a hydrogen rich environment. The process can

handle wet feedstock without drying, does not require an expensive oxygen plant, and operates at relatively lower temperatures compared to conventional gasification processes. In addition, the SHR utilizes steam in the reactor to enhance the rate of methane formation.

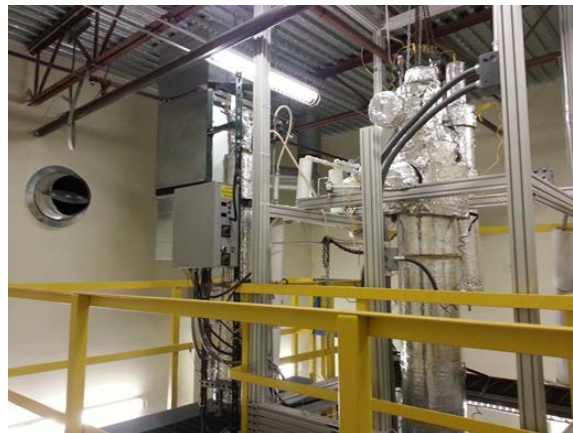


Figure 1: PDU SHR-WGS System

The reactor system used for this experiment was a PDU with a 5 lb/hr feed rate consisting of a bubbling fluidized bed SHR and a fixed bed type water gas shift reactor (WGS) to increase the methane production. The PDU was used to convert slurry composed of biomass and bio solids into a syngas and eventually to RNG. The slurry is fed into the PDU by a rotating auger through a 1-inch tube which enters the SHR reactor above the fluidized bed. When the slurry reaches the reaction zone, it reacts with hydrogen and water to produce methane, CO and CO<sub>2</sub>. Once the product gas leaves the reaction zone, it passes through a cyclone to separate out solid particles from the product gas stream. The product gas then passes through the WGS to be further converted into methane rich gas. A heat exchanger then cools down the gas to about room temperature condensing steam back into water. The dry gas is then further processed and compressed into high quality RNG. For this project, a gas recirculation loop was designed and added to recycle internally generated hydrogen back to the reactor for a self-sustained operation without external hydrogen supply.

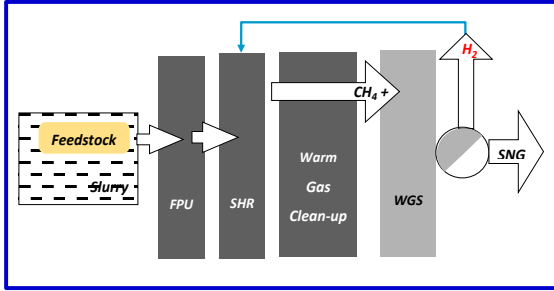


Figure 2: SHR-WGS Process Diagram

**Status**

This project was completed in November 2014 and a final report is on file with complete technical details and findings.

**Results**

The demonstration yielded a final gas composition of 73% CH<sub>4</sub> and 27% CO after CO<sub>2</sub> separation (43% CH<sub>4</sub>, 16% CO and 41% CO<sub>2</sub> before CO<sub>2</sub> separation). The methane content can be further increased close to 90% through additional methanation process. Carbon conversion efficiency was 75% meaning that 75% of carbon in the feedstock was utilized to produce the product gas. Remaining 25% was converted into char which can be utilized as fuel for heat source. Through this project, the process condition was optimized at 1.0 H<sub>2</sub>/C mole ratio, 1.5 H<sub>2</sub>O/feedstock mass ratio, nominal reactor temperature of 750oC and pressure of 400 psia, and 320-380oC WGS operation temperature.

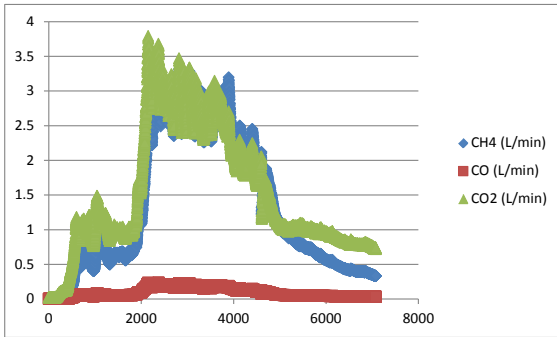


Figure 3: Product Gas Composition

Based on the demonstration results, a preliminary engineering design was developed for a 5 ton/day pilot plant to produce 20,000 diesel equivalent gallons of RNG annually. In addition, an economic analysis for a commercial scale plant was also performed. The analysis showed that the RNG production cost will range

from \$5 to \$15/MMBtu depending on site capacity and applications.

**Benefits**

Biofuels derived from waste-based feedstocks typically have lower carbon intensities compared to other biofuels and alternative fuels. The SHR process has demonstrated potentials to produce high quality RNG from biomass waste more efficiently than competing renewable fuels and energy technologies including anaerobic digestion. Based an estimate of green waste and biosolid resources that can be technically converted into RNG, a wide-scale implementation of this technology can help to replace about 4.9% of the natural gas consumption in California.

**Project Costs**

The total project cost was approximately \$922,000. SCAQMD funded \$72,916 leveraging cost shares from project partners including \$650,000 from CEC.

**Commercialization and Applications**

For the next phase, a demonstration with a circulated fluidized bed reactor to simulate a real world operation is recommended to validate and refine the pilot plant design. A successful validation of the process will then lead to a pilot plant demonstration at the Riverside Waste Quality Control Plant.

## **Appendix D**

### **List of Acronyms**

## LIST OF ACRONYMS

AFRC—air/fuel ratio control	GC/MS—gas chromatography/mass spectrometry
AFVs—Alternative Fuel Vehicles	GGE—gasoline gallon equivalents
APCD—Air Pollution Control District	GHG—Greenhouse Gas
AQMD—Air Quality Management District	GTL—gas to liquid
AQMP—Air Quality Management Plan	H&SC—California Health and Safety Code
ARB—Air Resources Board	HCCI—Homogeneous Charge Combustion Ignition
ARRA—American Recovery & Reinvestment Act	HCNG—hydrogen-compressed natural gas (blend)
AWMA—Air & Waste Management Association	HDDT—highway dynamometer driving schedule
BACT—Best Available Control Technology	HD-FTP—Heavy-Duty Federal Test Procedure
BSNO <sub>x</sub> —brake specific NO <sub>x</sub>	HDV—heavy-duty vehicle
BMS—battery management system	HEV—Hybrid electric vehicle
CAAP—Clean Air Action Plan	HPDI—High Pressure Diesel Injection
CAFR—Comprehensive Annual Financial Report	HT—high throughput
CARB—California Air Resources Board	HTPH—high throughput pretreatment and enzymatic hydrolysis
CATI—Clean Air Technology Initiative	ICE—internal combustion engine
CCF—California Clean Fuels	ICEV—internal combustion engine vehicle
CDFA/DMS—California Department of Food & Agriculture/Division of Measurement Standards	ICTC—Interstate Clean Transportation Corridor
CEC—California Energy Commission	LCFS—Low Carbon Fuel Standard
CE-CERT—College of Engineering – Center for Environmental Research and Technology	Li—lithium ion
CEMS—continuous emission monitoring system	LIMS—Laboratory Information Management System
CFCI—Clean Fuel Connection, Inc.	LNG—liquefied natural gas
CFD—computational fluid dynamic	LPG—liquefied petroleum gas or propane
CNG—compressed natural gas	LSV—low-speed vehicle
CO <sub>2</sub> —carbon dioxide	MATES—Multiple Air Toxics Exposure Study
CO—carbon monoxide	MECA—Manufacturers of Emission Controls Association
CRT—continuously regenerating technology	MPEFI—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
DEG—diesel equivalent gallons	MY—model year
DGE—diesel gallon equivalents	MTA—Metropolitan Transportation Authority (Los Angeles County “Metro”)
DF—deterioration factor	NAFA—National Association of Fleet Administrators
DMS—Division of Measurement Standards	NCP—nonconformance penalty
DMV—Department of Motor Vehicles	NEV—neighborhood electric vehicles
DOC—diesel oxidation catalysts	NextSTEPS—Next Sustainable Transportation Energy Pathways
DOE—Department of Energy	NGV—natural gas vehicle
DOT—Department of Transportation	NHTSA—National Highway Traffic Safety Administration
DPF—diesel particulate filters	NMHC—non-methane hydrocarbon
DRI—Desert Research Institute	NO—nitrogen monoxide
ECM—emission control monitoring	NO <sub>2</sub> —nitrogen dioxide
EGR—exhaust gas recirculation	NO + NO <sub>2</sub> —nitrous oxide
EPRI—Electric Power Research Institute	NOPA—Notice of Proposed Award
ESD—emergency shut down	NO <sub>x</sub> —oxides of nitrogen
EV—electric vehicle	NREL—National Renewables Energy Laboratory
FCV—fuel cell vehicle	OBD—On-Board Diagnostics
FTA—Federal Transit Administration	
FTP—federal test procedures	
g/bhp-hr—grams per brake horsepower per hour	



## LIST OF ACRONYMS (cont'd)

OCTA—Orange County Transit Authority  
OEM—original equipment manufacturer  
PAH—polyaromatic hydrocarbons  
PbA—lead acid  
PCM—powertrain control module  
PEMFC—proton exchange membrane fuel cell  
PEV—plug-in electric vehicle  
PHEV—plug-in hybrid vehicle  
PM—particulate matter  
PM<sub>2.5</sub>—particulate matter ≤ 2.5 microns  
PM<sub>10</sub>—particulate matter ≤ 10 microns  
ppm—parts per million  
ppb—parts per billion  
RDD&D—research, development, demonstration  
and deployment  
RFS—renewable fuel standards  
RI—reactive intermediates  
RRC—rolling resistance co-efficient  
RTA—Riverside Transit Agency  
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  
SIP—State Implementation Plan  
SoCalGas—Southern California Gas Company (A  
Sempra Energy Utility)  
SULEV—super ultra-low emission vehicle  
TAO—Technology Advancement Office  
TC—total carbon  
THC—total hydrocarbons  
TO—task order  
TRB—Transportation Research Board  
TSI—Three Squares, Inc.  
UDDS—urban dynamometer driving schedule  
µg/m<sup>3</sup>—microgram per cubic meter  
U.S.EPA—United States Environmental Protection  
Agency  
U.S. —United States  
ULEV—ultra low emission vehicle  
VMT—vehicle miles traveled  
VOC—volatile organic compounds  
WVU—West Virginia University  
ZEV—zero emission vehicle